PACKAGE engineering

Shortcuts double manual packaging output

Fitting air-operated numbering units into manual packaging lines, and installing tables that arrange work for easier handling, speed packaging of parts too diverse for automatic packaging. (See Page 25)

Don't let slotted partitions confuse you

Choosing just the right partition for a particular package rests on careful scrutiny of types, materials, fabrication (query—make or buy?), uses—and a balancing of advantages and limitations inherent in each. (See Page 30)

Getting packaging line efficiency—in a hurry

When production urgency permits no time for machinery development and modification, the rapid assembling of standard machines and devising of work techniques to use with them *can* be done effectively. (See Page 36)

Complete table of contents on Page 2

JANUARY 1960

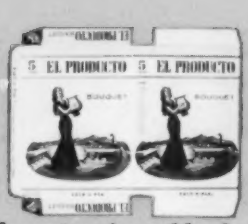
VOLUME 5 • NUMBER 1

BULK RATE
U. S. POSTAGE
PAID
PONTIAC, ILLINOIS
PERMIT NO. 1

Package Engineering
185 N. Wabash Avenue,
Chicago 1, Illinois
Form 3547 requested

new

SCANDIA "POCKET PACKER"



glues and forms pocket-pack carton from blank

automatically collates and loads cigars

closes carton and overwraps in cellophane with opening tape

Up to now pocket-pack cartoning and wrapping has required several operations—either manual, slow-speed automatic, or a combination of both.

Scandia's new, fully-automatic, high-speed "Pocket-Packer" now combines all these operations in one machine.

The new Scandia Model 401 "Pocket-Packer" actually forms a carton blank (side-opening or conventional type) *around the cigars* as they move through the machine—with all loading, gluing, folding and wrapping done automatically. Adaptable to a full range of cigar sizes...at speeds of 75 pocket-packs or more per minute!

All this results in dramatic savings in capital equipment, labor, floor space, carton costs *and time*. It all adds up to higher pocket-pack production at lower packaging costs.

Let us tell you the fascinating story of this new Scandia machine. Write, wire or telephone today.

PMMI

SCANDIA

PACKAGING MACHINERY COMPANY

500 Belleville Turnpike • North Arlington, New Jersey • Tel: WYman 1-8400

KRAFT BAG CORPORATION, through correct construction of your multiwall shipping sacks, will reduce seepage and spoilage of contents while minimizing your shipping and storage problems.

If your product fits into a bag –
let us make the bag to fit your product!

KRAFT BAG CORPORATION

Gilman Paper Company Subsidiary

630 Fifth Ave., N.Y. 20, N.Y. • Daily News Bldg., Chicago 6, Ill.

Integrated mills at St. Marys, Georgia and Gilman, Vermont

Gilman PAPER CO.
• St. Marys Kraft Corp.
• Gilman Paper Co.
• The Coldwood Corp.
• Kraft Bag Corp.

PE

Our Newest
KRAFTPACKER

Open Mouth Bag Filling Machine provides maximum accuracy and speed. May we tell you about our stainless steel models? Remarkable in performance. Surprisingly low in price.

☐ We are interested in improving our bag.
☐ We are interested in your Kraftpacker.

NAME OF COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____ PRINCIPAL_____

PRODUCT MFD._____

For more information circle No. 202 on Reader Service Card, Page 71

Circle No. 201 on Card, Page 71

JANUARY 1960 • VOLUME 5 • NUMBER 1

PACKAGE engineering

AN ANGUS J. RAY PUBLICATION

For your calendar

January 6-8. AMA orientation seminar on packaging foams and expanded plastics, Hotel Astor, New York, N.Y. Contact: John L. Wood, American Management Association, 1515 Broadway, New York 36, N.Y. *Telephone: JUdson 6-8100.*

January 17-20. 53rd Annual Exhibit of the Canning Machinery and Supplies Association, Americana Hotel, Bal Harbour, Florida. Contact: W. D. Lewis, Secretary-Treasurer, Canning Machinery & Supplies Association, 4630 Montgomery Avenue, Washington 14, D. C. *Telephone: OLiver 6-6979.*

January 18-20. 53rd Annual Convention of the National Canners Association, Americana Hotel, Miami Beach, Florida. Contact: R. F. Alexander, National Canners Association, 1133 20th Street, N. W., Washington 6, D. C. *Telephone: EXecutive 3-7030.*

February 8-10. 5th Military-Industry Packaging and Materials Handling Symposium, Sheraton Park Hotel, Washington, D. C. Contact: Lt. Col. George A. Davies, Chief, Packaging Branch, Headquarters, USAF, Room 4312, Munitions Building, Washington 25, D.C. *Telephone: LIberty 5-6700, Ext. 6-2956.*

April 4-6. AMA National Packaging Conference, Shelbourne Hotel, Atlantic City, N. J. Contact: John L. Wood, American Management Association, 1515 Broadway, New York 36, N.Y. *Telephone: JUdson 6-8100.*

April 4-7. 29th AMA National Packaging Show, Convention Hall, Atlantic City, N.J. Contact: John L. Wood, American Management Association, 1515 Broadway, New York 36, N.Y. *Telephone: JUdson 6-8100.*

April 19-21. Annual meeting of the Research and Development Associates, Food and Container Institute, Inc., Congress Hotel, Chicago, Ill. Contact: Col. R. A. Isker, secretary, Research and Development Associates, 1819 W. Pershing Road, Chicago 9, Ill. *Telephone: LAfayette 3-5500.*

April 19-23. Interpack and EPF Congress in Dusseldorf, Germany. Contact: Pierre J. Louis, Institut Francais de L'emballage et du Conditionnement, 3 Rue La Boetie, Paris 8, France. *Telephone: ANjou 68-48-72-56.*

October 31-November 2. 22nd Annual National Packaging Forum of the Packaging Institute, Statler-Hilton Hotel, New York, N.Y. Contact: Charles A. Feld, executive director, Packaging Institute, 342 Madison Avenue, New York 17, N.Y. *Telephone: MUrray Hill 7-8875.*

Articles

25 Air-operated numbering machine speeds up manual packaging, by Marion T. Smith, project engineer, McQuay-Norris Manufacturing Co.
Showing how tables and specially-built equipment add efficiency to an inherently manual packaging operation—stepping up production 100 per cent.

30 Understanding slotted partitions, by Edwin S. Worden, Edwin S. Worden and Associates
Examining some five types of partitions made from ten different materials and stressing advantages and limitations to note when choosing a partition.

36 Crash program packaging lines give good results, by E. P. Schneider, Jr., plant manager, Brake Fluid Division, Wagner Electric Corporation
Rapid assembling of packaging line machinery and components (without modifications) shows how to attain line effectiveness quickly.

48 Fast, simple methods measure label scuff, by Irwin R. Sipherd, supervisor of chemical control, National Distillers Products Company, Division of National Distillers and Chemical Corporation
Modified Sutherland ink rub tester provides in 20 minutes the label scuffing experience that a transcontinental freight trip normally furnishes.

52 Keeping jar tops free of product particles
Capitalizing on a three-part combination of practical production shortcuts contributing to an effective jar closing operation.

55 Practical pointers to better folding carton performance: Part I—Developing your requirements
First part of a series of articles reviewing user carton problems and carton plant practices affecting carton performance in user plants.

Package Engineering is indexed in Engineering Index

Departments

4 A note from the publisher

6 The PULSE / of packaging

62 Announcements of machinery and products

70 Industry literature available free

76 Structural design notes for corrugated containers:
Note No. 12: Compression strength of boxes — Part II

78 Classified advertising

80 What we think (our editorial page)

Reader Service Cards on Pages 71, 72

Our December, 1960 issue will carry a cumulative editorial index for the year listing our feature articles by subject, author, and other headings.

Packaging machine — Model CKP-2 (Patent Pending) by Crompton & Knowles Packaging Corporation

Packaging Paper Plates?

Vitafilm *is just your dish!*

When it comes to packaging paper products, there is no transparent film on the market that does the job so well as VITAFILM.

Witness these smart and smoothly packaged paper plates made by Dixie Cup's* Kleen Products Division.

Snug wraps—strong, perfectly sealed, excellently transparent, dimensionally stable.

AND VITAFILM *doesn't attract dust* —always a real plus when merchandising containers for foodstuffs.

This great Goodyear film has a wonderful quality "feel," doesn't split or run — and today it is priced right on the button with the most common of the "low-priced three" in transparent films.

Printability is fine—and adaptability to high-speed packaging operations has been proved outstanding.

So with the price right and the performance unmatched, why wait? Get VITAFILM around your product—*the greatest thing you can place between you and your customer!*

Call your Goodyear Packaging Films Representative. Or write direct for details: Goodyear, Packaging Films Dept. M-6432, Akron 16, Ohio.

Vitafilm BY GOODYEAR

The finest in sheer protection

*A trademark of the Dixie Cup Division of American Can Company
Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

PACKAGE engineering®

AN ANGUS J. RAY PUBLICATION

Angus J. Ray
Publisher

R. Bruce Holmgren
Editor

Harry E. Vick, Jr.
Managing Editor

Judy Van Dam
Assistant Editor

Laurence V. Burton
Contributing Editor

Anne Bernhard
Business Manager and
Circulation Director

Burton Cherry
Art Director

Executive and editorial offices:
185 North Wabash Avenue
Chicago 1, Illinois
Telephone: Financial 6-1440

Advertising sales offices:
Irwin F. Megargee
National Bank Building
Ocean City, New Jersey
Telephone: EXport 9-3519

Arnold Gieseler
299 Madison Avenue
New York 17, New York
Telephone: YUkon 6-8575

Ronald F. Inglehart
185 North Wabash Avenue
Chicago 1, Illinois
Telephone: Financial 6-1440

West Coast representatives:
The Robert W. Walker Company

730 South Western Avenue
Los Angeles 5, California
Telephone: DUnkirk 7-4388

57 Post Street
San Francisco 4, California
Telephone: SUtter 1-5588

Package Engineering is published monthly by Angus J. Ray Publishing Co., 185 North Wabash Avenue, Chicago 1, Illinois. Angus J. Ray, president; R. B. Holmgren and I. F. Megargee, vice presidents; James G. Culbertson, secretary, and Ethyl K. Ray, treasurer. Please address articles for publication and correspondence regarding the editorial content to the editor. Statements and opinions expressed in articles and editorials are those of the respective authors, for which Package Engineering assumes no responsibility. Copyright 1959 by Angus J. Ray Publishing Co. The name Package Engineering is registered in the U. S. Patent Office.

Package Engineering is circulated without charge to engineering, research, development, production and purchasing personnel concerned with packaging in all companies packaging their products for marketing or shipment. Thus qualified recipients are engineering and technical personnel concerned with package research and development, packaging production and packaging purchasing, within the United States; to all others, the subscription rate is $10.00 a year.

Member of
Business Publications Audit
of Circulation, Inc.

BPA

A note from the Publisher

New Year Predictions

January is traditionally the month of predictions. In addition, this January is the start of a new decade and there will be many long range predictions.

I've heard nothing predicted for the sixties except the greatest degree of prosperity the country has ever known, and I certainly don't know any reason why this should not be so.

The danger in all these rosy predictions is assuming that a high level of general business is an assurance that each individual business will prosper—in assuming that all one needs to do is to be present, and each individual business will be swept along to new highs because general business conditions will be good.

Regardless of the state of business in the next 10 years, some businesses that are successful today will fall by the wayside and some businesses that are small or unknown today will dominate their markets 10 years from now. Many of the failures of businesses that are adequately financed and competently staffed will result from incorrectly appraising the future.

It is true that the population explosion that one reads about every day will increase the demand for all types of packaging and will increase the opportunities for success in the packaging field. However, this increased market will bring new suppliers into the field to increase competition. Increased competition will lead to developments in packaging that can make equipment obsolete or destroy the market completely for some types of packages successfully used today.

The seeds of success for some companies in the 1960's and beyond have already been sown in making basic policy decisions that will culminate five or ten years from now and that will fulfill a need at that time.

For instance, no small part of the success of Sears, Roebuck and Co. today stems from a basic decision made 25 or 30 years ago when it correctly decided that the automobile would revolutionize the country and its buying habits, increasing city population and decreasing farm population. Sears started retail stores long before the trend was obvious.

No one has a crystal ball to tell you what the future has in store. A year from now we will remember only the correct predictions, while those that have been incorrect will be forgotten.

The future belongs to the companies that invest in it, to companies that keep their packaging lines modern and efficient, to companies that continually investigate the new packaging materials and are not afraid to get off the beaten path. The future belongs to companies who not only run their businesses efficiently today, but who correctly appraise the future. The only thing certain about the future is its uncertainty.

Angus J. Ray

Publisher

DO YOU BUY JUST AN ADHESIVE ...OR ADHESIVE ANSWERS TO PACKAGING PROBLEMS?

Buying adhesives involves knowledge in four major areas.

ADHESIVE TECHNOLOGY There are literally hundreds of thousands of adhesive formulas. The selection of chemical and physical characteristics is paramount. Is *your* supplier's salesman well trained—and backed by a competent staff?

PACKAGING MECHANICS Every packaging machine—including 1959's top speed models—is "different" and its idiosyncrasies must be understood before specifying adhesives. Our salesmen take off their coats and work with you, to prevent machining problems from developing.

PACKAGING MATERIALS Changes in packaging materials may require changes in adhesives. We make it our business to keep abreast of this rapidly changing field. Does *your* adhesive supplier?

PACKAGE PERFORMANCE The salesman must understand field demands made on packages. Our "shirt-sleeve" salesmen do.

Why not measure the adhesive salesman serving you against this yardstick.

Freedom from packaging adhesive problems can be had without extra cost if you use the services of a Morningstar-Paisley Technical Service Man. He will be glad to discuss your requirements at your convenience.

MORNINGSTAR-PAISLEY, INC., 630 W. 51st St., New York 19, N.Y. and 1770 Canalport Avenue, Chicago 16, Illinois.

MORNING STAR Paisley

MORNINGSTAR-PAISLEY INC.

Continuous Research in Adhesives, Starches, Gums, Resins, Plastisols, to Provide Top Technical Service to All Industry

Offices in 28 principal cities from coast-to-coast. In Canada: Morningstar-Paisley of Canada, Ltd., Toronto

For more information circle No. 204 on Reader Service Card, Page 71

The PULSE / of packaging

Packaging across the seas:

A glance at the program of the April, 1960, conference of **European Packaging Federation** in Dusseldorf suggests topics Europeans consider apparently important: shelf-life of pre-packaged foods depending on the constancy (sic) of packaging materials, effects of transportation requirements on packaging, packaging machinery for the market of tomorrow and electronics in the packaging field. EPF is also planning a research conference to discuss the use of cushioning materials, and transport hazards.

Dow Chemical Co. (U.K.) Ltd. is broadening its activities, plans to take over direct sales of Dow-produced packaging films . . . A Dutch manufacturer in The Hague says it has a machine that seals 1,000 to 3,000 plastic bags an hour, can replace the air with nitrogen in the package and says it has a jam-proof safety device that operates against "overfilling" . . . **Clupak, Inc.** is organizing a world-wide licensing program to cut across international barriers, says licensee paper companies will share with each other their research advances and technical know-how.

Figures from Federal Republic of Germany (latest available, but just released) show that with 24 consumer products, packaging costs ranged from 3 per cent of the manufacturing costs (in 22 per cent of the cases) to as high as 10 or more per cent of manufacturing costs in 34 per cent of the cases. A look at textile packaging shows that packaging materials represent 50 per cent of packaging costs; wages, 28 per cent and "packaging general expenses," 22 per cent. Reports show that the Federal Republic is exporting 70 per cent of its packaging machinery to eight countries, including the United States.

Trends to watch:

We hear that the trend to aluminum cans for aerosol products is growing. Two major can makers and a tube manufacturer are in the process of turning these cans out on a large scale basis . . . By 1962, use of large polyethylene bags for industrial chemicals, foods, seed, and other flow-fill products should reach the 100 million mark, according to **The Dobeckmun Co.**

Predicting increases in automatic merchandising through vending machines, **National Automatic Merchandising Association** says vending machines of the 60's will be as different as today's machine is from the simple models of the 20's. Experts in this field see new packaging "to make vended foods more attractive" and using new films for sealing containers of prepared foods. Other predictions are that automatic selling of foods, beverages and even hot meals will require new machines and new types of packaging.

Glass container demand should reach 160.2 million gross in 1960, 3 percent above estimated shipments in 1959, the **Econometric Institute** predicted for the **Glass Container Manufacturers Institute.**

Groups in the news:

Society of Packaging & Handling Engineers tells us its debts are now paid in full, it is in good financial condition and has "high hopes" for increasing membership and income during 1960. Its national education committee is setting up plans to help local chapters build better programs, and chapters may hold local or regional shows and short courses, even though SPHE's directors voted not to have a national show or short course in 1960 . . . Commenting on its establishing a folding carton committee, **Packaging Institute** says this new group will seek to develop performance (use) standards for this container.

Notes from the government:

The **Office of Naval Material** has set dates and locations for 43 military packaging seminars for industrial management, says these will be held in 37 cities under the sponsorship of the local inspector of Naval Material. Interested packagers should contact their local Inspector of Naval Material Office for details of specific sessions . . . Military petroleum supply agency says its petroleum packaging industry advisory committee (established in 1958) has been "highly effective" in helping the government solve petroleum packaging problems by adopting where possible commercial packaging practices and techniques.

The **U. S. Forest Products Laboratory** newly-established industry advisory committee on corrugated container research is giving priority to two problems: (1) establishing guides to determine stacking strength of corrugated containers, and (2) investigating wet-strength treatments that can be used to keep the dry strength of a box when it is subjected to a wet condition. Members of this committee represent some 20 major users of corrugated boxes.

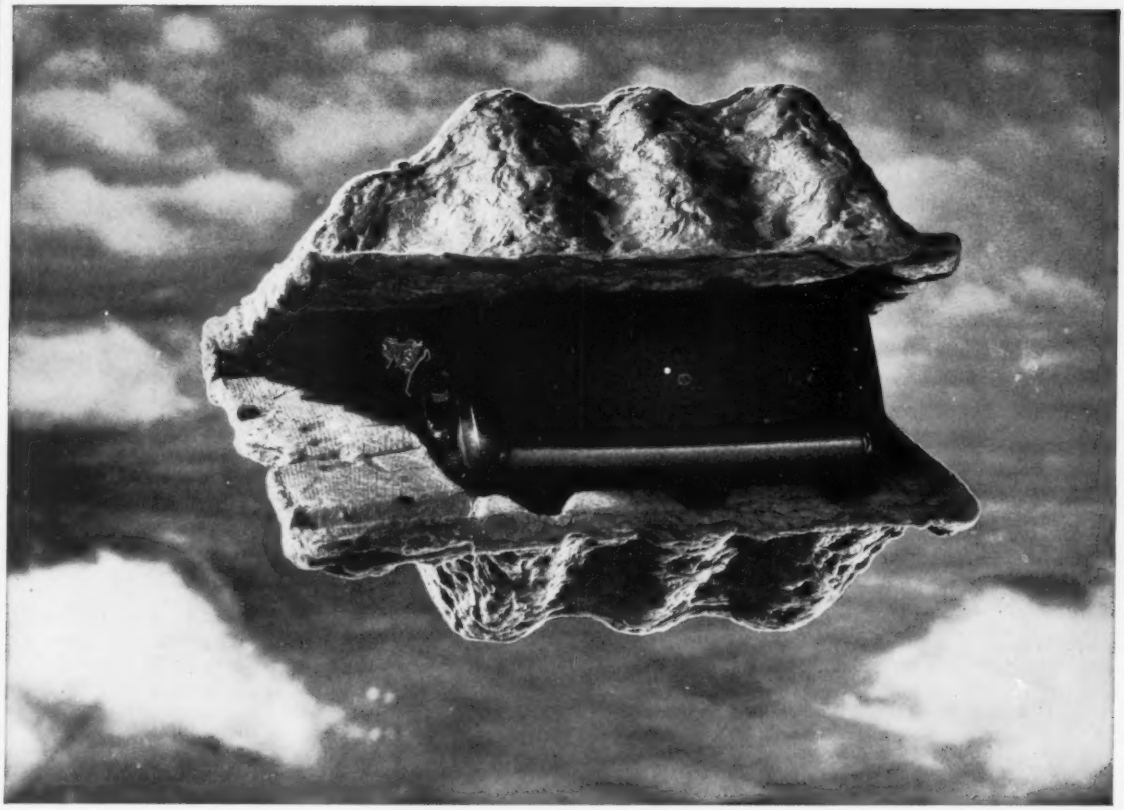
Dollars and cents:

For the nine months ended September 30, 1959, **Crown Cork & Seal Co., Inc.** reports net sales of $92,885,000 and net profit of $1,655,000. For the same 1958 period, sales were $87,530,000 and profit, $1,412,000 . . . **West Virginia Pulp and Paper Co.** reports for the fiscal year 1959, ended October 31, sales totaled $233,000,000, compared to 1958's $208,000,000, and net income increased from $9,575,000 in 1958 to $11,777,000 in 1959, a gain of 23 per cent . . . For the nine months ended September 30, **Stone Container Corp.'s** net income was $1,395,485, up 34 per cent over the $1,044,648 earned in the 1958 period. Net sales for 1959's first three quarters totaled $30,519,333, a 17 per cent increase over 1958's $26,077,406.

Sales of the **Bemis Bro. Bag Co.** for the first nine months of this year totaled $98,382,894, an 11 per cent increase over 1958's $88,781,548; net income was $2,183,639, 17 per cent higher than the $1,867,840 for the same 1958 period . . . **Morningstar-Paisley, Inc.** reports sales for the nine-month period ended September 30 of $19,018,687, an increase of 12 per cent over sales for the same 1958 period. Net earnings for the 1959 period were $499,860, an 18 per cent increase over the 1958 nine-month figure of $422,909 . . . Net sales of **Diamond National Corp.** for the first nine months of 1959 amounted to $168,790,000, compared with $152,511,000 for the same period a year ago. Net earnings for the same 1959 period totaled $7,565,000, compared with $6,782,000 for the corresponding 1958 period.

For the first nine months of the year, **Minnesota Mining & Manufacturing Co.'s** sales totaled $323,079,201, with earnings of $42,583,641, compared with sales of $271,366,401 and earnings of $29,568,080 for the same 1958 period . . . **Standard Packaging Corp.** reports net income of $5,108,113 for the 40-week period ended October 31, compared with $2,142,270 for the same 1958 period. Sales rose to $68,938,619, a 44 per cent improvement over 1958 sales of $47,-

Bemis Tekmold® packaging *floats* these converters safely to the customer . . .



and *cuts packaging costs 25%*

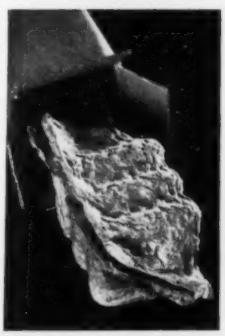
The experience of Terado Company, of St. Paul, with Tekmold Packaging is typical.

Previously, various models of Terado converters (they convert 6- and 12-volt storage-battery or automobile current into 110-volt AC) were encased in hand-folded, die-cut and scored corrugated board, then hand inserted in the shipping box.

Then Terado switched to Tekmold, the featherweight, molded pulp forms that *float* the product and cushion it from shock in all directions, while holding it firmly in place. Tekmold enabled Terado to slash labor costs a whopping *50 per cent!*

Tekmold is versatile. It is the ideal protective shipping package for a wide range of appliances, instruments, small machines, etc. And completely new and different applications may be developed for *your* product.

Write or phone us. Tell us your problem. We'll be glad to see whether we can help you.



Photos of two Terado converter models, with their completely different Tekmold applications: one with end caps only; the other completely enclosed. In one instance, Tekmold replaced three hand-folded corrugated sheets; in the other, five sheets.

All Tekmold packaging is tailored for the specific job.

TEKMOLD PRODUCTS PLANT • BEMIS BRO. BAG CO.
Where flexible packaging ideas are born
325 27th Avenue, N. E., Minneapolis 18

New, practical, money-saving HELPS for your packaging dept.

The Package Life Line starts here
Get Cost Reduction and Better Package Quality
Combine Green Core Engineering with Tape to Insure Your Package Life Line

Get these free bulletins on *PACKAGINEERING*

Has your packaging department been carefully analyzed and scientifically organized?

No matter how well it *appears* to be operating, everyone concerned can benefit by these new, helpful data sheets which are free for the asking.

The first bulletins are now ready and more will be released at intervals as new suggestions are developed and proved. They will be sent to you without obligation if you'll let us know your interest, on your company letterhead.

3M COMPANY

MID-STATES GUMMED PAPER DIVISION
MINNESOTA MINING & MANUFACTURING COMPANY
Dept. 121, 6850 So. Harlem Ave., Bedford Park (Argo P.O.), Ill.
New York • Syracuse • Boston • Philadelphia • Atlanta • Cleveland • Cincinnati • Kalamazoo • St. Louis • Los Angeles

986,606 for the same period . . . For the nine months ended September 30, **Thatcher Glass Manufacturing Co., Inc.** reports net sales of $39,652,673 and net income of $2,023,118. For the same 1958 period, sales were $32,109,163 and income, $1,768,482.

More expansion for packaging:

Hercules Powder Co. plans to build a multimillion-dollar polypropylene plant at Lake Charles, La., to ultimately produce in excess of 100 million lb. a year. Hercules also will expand its West Coast manufacturing facilities . . . **Stein Hall & Co., Inc.** has opened a new subsidiary, **Stein Hall Southern Inc.,** in Charleston, S. C. . . . **National Can Corp's** new 125,000-sq.-ft. plant at Hanover, Penna., will be ready for production in the second quarter of 1960.

Plastic Papers, Inc., producers of polyethylene-coated paper, board and foil, is now in production . . . A new company, **Pro-Pak,** has been formed to sell, install and service the **Horix** filler line and the former **Camco** and **Tite-Cap** equipment on the West Coast . . . Completion date for **Fibreboard Paper Products Corp.'s** new integrated shipping container plant in Phoenix is scheduled for March, 1960.

Resisto Chemical, Inc., Wilmington, has acquired and will manufacture and market **Dri-Dux** plastic coatings . . . **Clupak, Inc.** announces that its paper is now being produced by **St. Regis Paper Co.** at its Pensacola mill and by **Crown Zellerbach Corp.** at its Antioch, Calif. mill . . . **Phillips Petroleum Co.** and **Joanna Western Mills Co.** have formed a jointly owned firm, **Phillips-Joanna Co.,** to produce all types of polyethylene film.

A 224,400-sq.-ft. corrugated box plant in Chicago has been officially opened by **Owens-Illinois Paper Products Div.** . . . The Salinas, Calif. facilities of **Package Containers, Inc.** have been purchased by **Chippewa Plastics Co.** and will become its flexible packaging division . . . **Strong Cobb Arner Inc.** has entered the aerosol packaging field through the acquisition of **PanPak, Inc.**

Packaging Services, Inc., a newly-formed contract packaging firm, has opened plant and offices in Wilmington . . . **Lone Star Bag and Bagging Co.** and **Wagner Bag Co.** will continue operations as subsidiaries of **St. Regis Paper Co.** which recently acquired these two companies . . . On December 1st, **Dura-Lee Corp.** moved into its new plant facilities in Kansas City, Kan.

What people are doing:

Two new appointments in the packaging development area of General Foods Corp. are **William D. Enzie,** material services director and **Theodore J. Holmgren,** design services director. At

For more information circle No. 206 on Reader Service Card, Page 71
Circle No. 207 on Card, Page 71

U.S.I. POLYETHYLENE NEWS

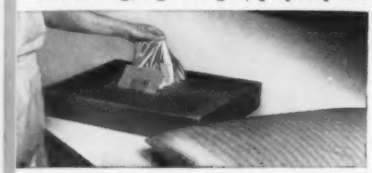
A series for plastics and packaging executives by the makers of PETROTHENE® polyethylene resins

JANUARY, 1960 — U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corporation — 99 Park Ave., N. Y. 16, N. Y.

Packaging Notes

Throw-away Polyethylene Pillow Covers are now being manufactured for use in hospitals.

The strong, lightweight, polyethylene



Disposable polyethylene pillow covers for hospital use are convenient, easy to handle, help prevent cross infection.

covers are easy to handle... are disposed of when the cover is changed. The Manufacturer reports the pillow slips reduce danger of cross infection, eliminate autoclaving and help avoid waste. In addition, the slips may be used as disposable containers for contaminated objects. The manufacturer packages the product in pop-up dispensers containing 500 covers.

Polyethylene Bag-in-Box Packaging has significantly lowered shipping costs and improved the efficiency of a mid-western creamery.

The company reports it now ships 50 to 55-lb. containers of dairy products in 3-mil polyethylene bags packed in corrugated cartons in place of previously used returnable 10-gal. cans. Use of polyethylene helped cut shipping and maintenance costs by 17%, and saved valuable storage space necessary for the metal cans.

Further benefits are: greater control over package weight, shelf-life of products is doubled, insect infestation is eliminated, and leakers are greatly reduced.

Bags are made from polyethylene tubing which are completely heat-sealed across top and bottom except for a 5-inch opening at one corner. The bags are filled through the opening which is then tied shut with tinned wire. A shipping line speed of 125 to 150 bag-in-box units per hour is reported.

Polyethylene Wins Awards In Packaging Competition

Packages consisting in whole or part of polyethylene won six of the top awards in the recent National Flexible Packaging Association competition. Awards were presented during the fall meeting of the NFPA at White Sulphur Springs, West Virginia.

First prize in the "Break-Through" category went to a food concern for a polyethylene-coated bag for a line of fruit-flavored "icicles". Among the other winners using polyethylene as a film, laminate, or coating were bags for: water softener, hybrid corn seed, potatoes, marshmallows, and a polyethylene wrapping for bread.

U.S.I. Forms International Company To Serve Polyethylene Markets Overseas

New Unit Will Provide Technical Service, Sales, and Market Information

A new European company has been formed by U.S.I. to handle the overseas sales of PETROTHENE polyethylene resins and to provide technical service to customers and help in developing markets for polyethylene products. The new unit will be called U. S. Industrial Chemicals Company-International, Division of Sales and Development Company of National Distillers and Chemical Corporation (International) S. A., located at Kirchenstrasse 13, Zug, Switzerland. Operations of the new subsidiary began during October of 1959.

Howard W. Woodham

Kenneth E. Cosslett

Well Equipped Facilities

A customer service laboratory will be an integral part of the new company. It will be completely equipped with processing and test equipment designed to meet European standards and operating conditions. The laboratory will be used to demonstrate processing techniques and for research and evaluation studies to help its customers develop new end-use markets and produce improved products. The laboratory will also include polymer testing equipment to insure product quality. The laboratory will service markets in the European countries, including the United Kingdom. Howard W. Woodham is the Manager of the new Technical Service Laboratory.

To Back Up Local Agents

Sales Manager of U.S.I.-International is Kenneth E. Cosslett, who has been U.S.I.'s Assistant Export Manager. According to Mr. Cosslett, U.S.I.-International's PETROTHENE resin sales will be made through its established representatives in European countries. The new company will be a supporting unit to help these representatives provide the close technical assistance which the polyethylene market demands.

Nuclear Reactors Use Polyethylene Plate

Polyethylene plate is used in nuclear reactors as a replacement for concrete in areas where weight and space limitations are of primary importance. Polyethylene plate exhibits excellent neutron-shielding capacity and is widely used for neutron-shielding protection on nuclear reactors.

Automatic equipment for uninterrupted extrusion of polyethylene plate is now producing 48-by-96-inch sheets of the plate at a rate of 6,000,000 pounds per year. It is extruded in thicknesses up to 1⅛ inches from PETROTHENE 100 resins in both natural and specially compounded forms.

Critical properties of the polyethylene plate produced by the continuous extrusion process are reported to be equal to or exceed those of plating produced by compression molding methods. The chief advantages of forming polyethylene plate by extrusion are a high rate of production and guaranteed freedom from voids.

Duck Hunters Use Polyethylene Film

Duck "ponds" of polyethylene film are being used by a number of hunters throughout the country.

Photo courtesy True, The Man's Magazine

The novel man-made "ponds" are built by spreading polyethylene film in fields where ducks feed on their southward journey each fall. The sun's rays reflect from the polyethylene film which appears to be open water in a frozen field. A spread of decoys further heightens the illusion.

Hunters say by the time ducks realize their mistake, it's usually too late!

DO YOU HAVE a new polyethylene packaging development you'd like the industry to know about? Make it routine to send your information on new developments to U.S.I. POLYETHYLENE NEWS.

Address the Editor,
U.S.I. POLYETHYLENE NEWS, U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corp., 99 Park Avenue, New York 16, N. Y.

WHEN THE PRODUCT YOU PACKAGE IS

STICKY

PATAPAR RELEASING PARCHMENT WILL PROVIDE THE "LET-GO" YOU NEED

Here, the packager has to worry about a substance whose moisture and sugar content results in extremely adhesive qualities . . . but the product must never stick to its container. Patapar Releasing Parchment provides the needed combination of resistance to moisture and sugar penetration, and low adhesion factor.

Other Patapar Releasing Parchments provide quick release for foodstuffs such as frozen meats, where ice makes separation difficult . . . plastics, where extreme temperatures and inherent tackiness make it necessary to include the releasing parchment in the production process . . . and adhesive materials, where the product can stick to itself or its user.

Send for free samples of Patapar Releasing Parchments and informative brochure describing the whole Paterson line of Releasing Parchments.

Patapar®
RELEASING PARCHMENT

75th ANNIVERSARY
QUALITY PAPERS FOR INDUSTRY
SINCE 1801

PATERSON PARCHMENT PAPER CO.
BRISTOL, PENNSYLVANIA
Sales Offices: New York, Chicago • West Coast Plant: Sunnyvale, Cal.

General Foods' Birds Eye Div., **Norman Vanasse** has been named manager of packaging design and development . . . **Henry G. Van der Eb,** vice president, is now responsible for Container Corp.'s folding carton plants east of the Mississippi and will continue to be responsible for the marketing division at Valley Forge, Penna., the New York National Accounts office, and the national carton sales policy. **Frederick S. Crysler,** vice president, will assume responsibility for all boxboard mills east of the Rocky Mountains and for the bleached board mill at Brewton, Ala.

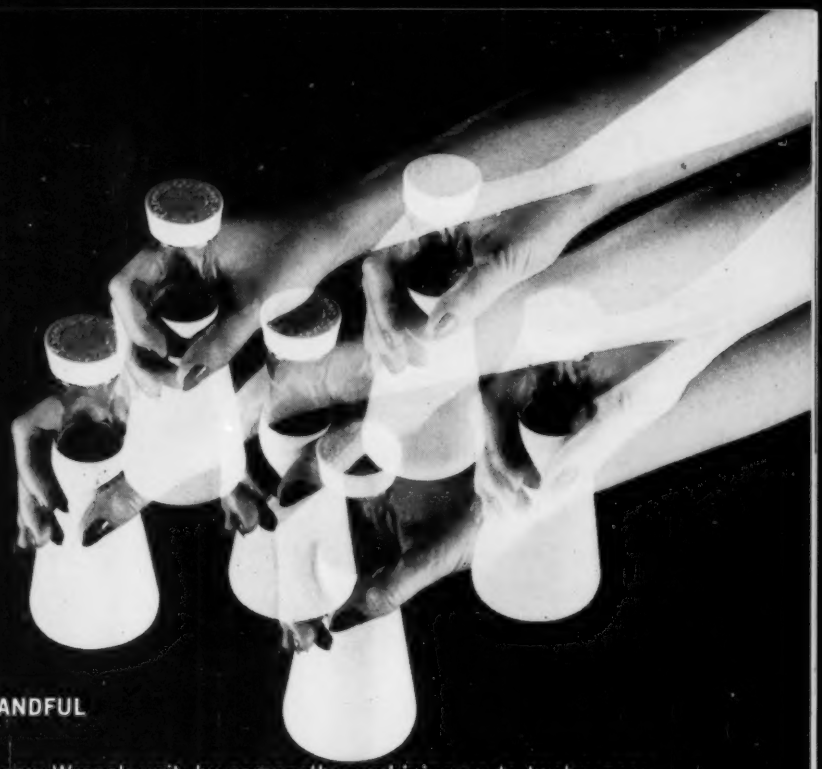
Allen B. Wrisley Co. has announced the following executive appointments—**George M. Klaus,** plant manager; **Walter M. Guzy,** purchasing agent; **Leonard G. Wargo,** production planning manager, and **Marvin Strauch,** manager of traffic, receiving, shipping and warehousing . . . New sales division managers for U. S. Industrial Chemicals Co. are **Roy A. Parker,** Kansas City and **Albert C. Brooks,** Baltimore; new sales office managers are **Joseph G. Longstreth,** St. Louis and **John A. Putnam,** Atlanta . . . **John D. Czarnecki** has been named director of research for the container division of The Sherwin-Williams Co.

Theodore Krause is now a packaging engineer at Chesebrough-Pond's, Inc., Clinton, Conn. He is a recent graduate of the school of packaging at Michigan State University . . . Anchor Hocking Glass Corp. has elected **Howard V. Fulton** vice president in charge of West Coast operations . . . **Thomas J. Henderson,** formerly responsible for packaging engineering for customer shipments at Douglas Aircraft Co.'s Santa Monica Div., is now packaging engineer for Satellite Systems at Lockheed Aircraft's Missile and Space Div. . . . **Robert P. Porteus** has been appointed a Wood Conversion Co. industrial products salesman, New York territory.

Three appointments at Olin Mathieson Chemical Corp.'s packaging division are: **James W. Scotton,** sales representative; **William C. Geddes,** carton salesman, and **Stanislaw Sobon,** technical service engineer . . . At Continental Can Co., **Hazen P. Master** has been named Baltimore district sales manager, metal division, and **Jerry V. Dixon** has joined the paper container division as sales representative . . . **Cecil E. Graham** has been named to the newly-created position of district sales manager for Fibreboard Paper Products Corp., Phoenix.

Forest products group of Owens-Illinois Glass Co. has named **Fred B. Schelhorn** to the new position of vice president-applied research and development and **Thomas M. Cox, Jr.,** vice president-business planning and analysis. At O-I's general research department **Dr. T. Robert Santelli** has been named

For more information circle No. 205 on Reader Service Card, Page 71
Circle No. 206 on Card, Page 71



EFFICIENCY BY THE HANDFUL

Container Corporation's new Wrapak unit, by compactly combining up to twelve cans or bottles, dramatically reduces handling costs for the manufacturer, distributor and retailer of drug and cosmetic products.

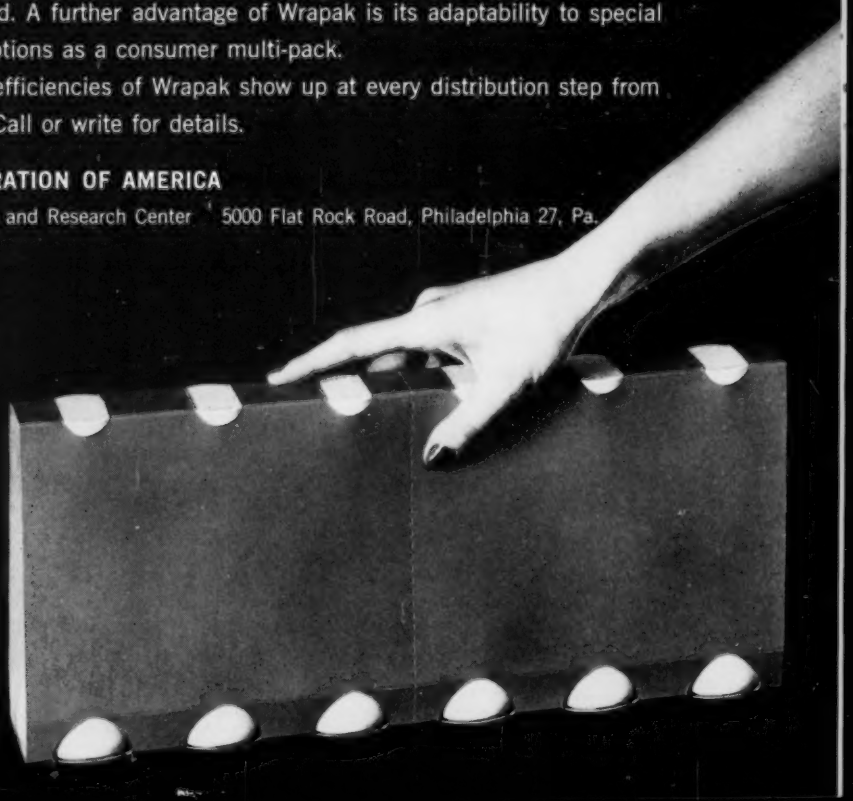
Wrapak Versatility accommodates and protects in shipment multiple units of a great variety of retail container styles, sizes and materials—including glass, plastics, metal and paperboard. A further advantage of Wrapak is its adaptability to special merchandising promotions as a consumer multi-pack.

The economies and efficiencies of Wrapak show up at every distribution step from plant to retail shelf. Call or write for details.

CONTAINER CORPORATION OF AMERICA

Folding Carton Marketing and Research Center · 5000 Flat Rock Road, Philadelphia 27, Pa.

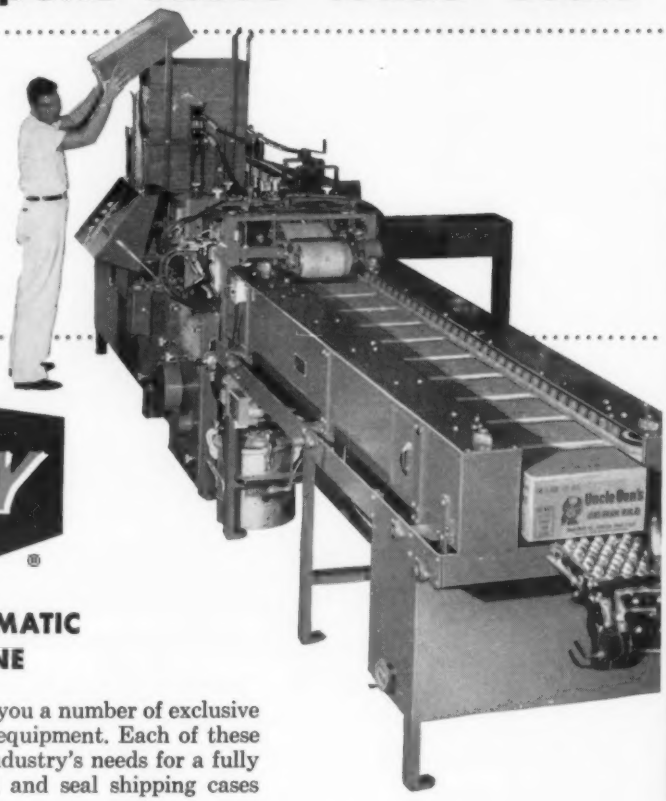
CCA



INTRODUCING A NEW MODEL IN THE PROVEN LINE OF SURE-WAY PACKAGE CASERS

Automatically opens cases—loads—seals

smooth
sure
—up to 25
cases a minute



SURE-WAY®

MODEL 50 FULLY AUTOMATIC INTEGRATED CASING LINE

The Model 50 "Sure-Way" brings you a number of exclusive features in fully automatic package casing equipment. Each of these features is carefully designed to meet the industry's needs for a fully *automatic* machine to erect, position, load and seal shipping cases in a continuous high-speed, in-line operation.

Shut downs and bottlenecks are eliminated. Operating costs are reduced. To sum it all up, here is the machine that helps build profits. Here are a few of the major features:

The new shipping case feeding and erecting mechanism employs duplex vacuum cups which are cam activated, stripping the bottom case from the vertical stack of 125 or more flat shipping cases.

New pressurized gluing system, incorporating "No case-No glue" device, gives greater uniformity of glue application, cuts maintenance and cleanup time. Intermittent motion of the compression unit allows maximum dwell time in minimum floor space – the average unit is less than 29' long, overall.

Complete console station centralizes all control of the machine, ensuring a smooth uninterrupted operation. Safety interlock switches throughout provide sure, positive functioning. Write for full information or call your nearest FMC representative.

The automatic case erecting-positioning assembly and the sealing-compressing assembly are available separately for existing installations of "Sure-Way" Casers.

"Sure-Way" Model 50 integrated casing lines are operating in several leading plants. Shown here is one of two complete lines at the Houston plant of Uncle Ben's, Inc. Others already installed, or scheduled for early delivery, will be handling a wide variety of packaged products such as aluminum foil, cake mixes, sugar, soap and detergents. There is virtually no limit to the range of packages, patterns, case sizes and casing combinations the "Sure-Way" can handle.

Putting Ideas to Work

fmc FOOD MACHINERY AND CHEMICAL CORPORATION®

FOOD MACHINERY AND CHEMICAL CORPORATION
Sure-Way Caser Equipment
Distributed Exclusively by FMC
General Sales Offices:
FMC PACKAGING MACHINERY DIVISION: 4900 Summerdale Ave., Philadelphia, Pa.
CANNING MACHINERY DIVISION: Hoopeston, Ill., San Jose, Calif.

beat well... goes for paper making, too

Rhinelander Glassine and Greaseproof papers package the products in this picture

Beat Well says the recipe – and the housewife who knows her cakes knows the importance of beating. And beating is equally important in the making of the high density wax laminated liners that protect cake mixes. These and a host of other time-saver foods are packaged in Glassine and Greaseproof papers . . . the wonder papers of modern packaging. Write for complete information stating your particular application.

In making Glassine and Greaseproof at Rhinelander, beating is a meticulously controlled process, considerably lengthened to transform the cellulose fibres into tiny strands, later tightly compacted on the paper machine. The microscopic fibrillae give Glassine and Greaseproof its density, its greaseproofness, and versatility.

These tight, dense papers keep foods fresh – resist greases, oils and fats–retain aromas, and protect flavor and quality.

RHINELANDER

Rhinelander Paper Company • Rhinelander, Wisconsin

Division of St. Regis Paper Company

GLASSINE AND GREASEPROOF... *PAPERS FOR PROTECTIVE PACKAGING*

It can't be just "adequate"...

PACKAGE MARKING

either makes money or wastes it

Readable, attractive marking made by Markem machines on your boxes or labels helps them from the moment they're marked to the time they're used — and can even help future sales as well. Good marking speeds handling . . . reduces waste and packing errors . . . allows quick selection by customers . . . simplifies and encourages reordering . . . carries the "quality" message of modern package design.

In contrast — *hard-to-read, uneven, "home-made" marking is a hindrance to your package or product from beginning to end* — and can actually waste thousands of dollars a year.

And a Markem marking method makes important "in-plant" savings as well. The right Markem machine, type and specialty ink working in your plant marks the *right* quantities at the right time — with savings in inventory, labor and delivery time . . . eliminates waste from obsolescence . . . handles "short runs" rapidly and economically . . . provides flexibility that allows *one machine to do a variety of marking jobs.*

Call your local Markem man or write directly, enclosing samples and requirements. Markem Machine Co., Keene 35, N. H.

MARKEM

everything industry needs . . . for profitable marking . . . since 1911

assistant director of research, and **Dr. Tryggve Baak**, former associate professor at University of Toledo, has joined the fundamental research section . . . Gilman Paper Co. has named three new sales managers—**Stan L. Kaufman**, Metropolitan New York; **Tom E. Morris**, Southeast, and **Robert E. Bringman**, specialty papers division.

Richard C. Adams has been appointed product manager for compound-applying machinery, Dewey and Almy Chemical Div., W. R. Grace & Co. . . . At Riegel Paper Corp., **Winthrop Endicott** has been promoted to the new position of sales manager of the Carolina Div., and **William E. Butler** has joined the packaging materials sales division . . . National Starch and Chemical Co. (Canada) Ltd. has named **Norman Riley** vice president and **John M. Shepherd** superintendent of the Montreal plant.

Thomas A. Duncan is now district sales manager of the Baltimore plant of Hinde & Dauch Div., West Virginia Pulp and Paper Co. Appointments for Hinde & Dauch's new box plants at Torrance, Calif. and Phoenix are: **Roy E. Jury**, district sales manager; **Frederick J. Bauer**, district production manager; **Sid B. Carnine**, director of M/R board sales—all at Torrance; and at Phoenix, **Henry W. Caldwell**, office manager, **Richard Allen**, sales representative, and **Paul Bavosa**, production manager. Westvaco's multiwall bag division has named **Victor S. Luke** manager, a newly-created position; **J. R. (Dick) Jones** sales manager, Kansas City district, and **John Floyd** technical service manager, Wellsburg, W. Va. and St. Louis plants.

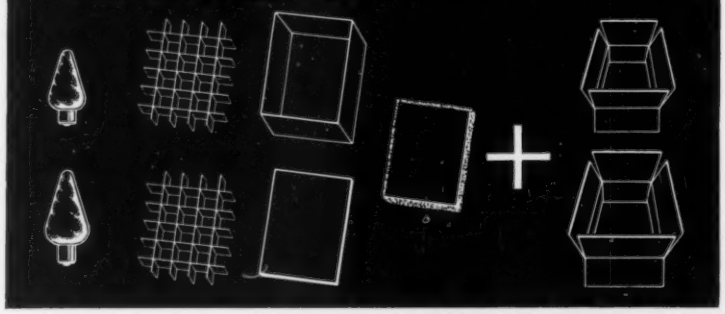
Alfred P. Terna is now manager-aluminum foil sales of Revere Copper and Brass Inc. . . . St. Joe Paper Co. has advanced **John Wyatt** to sales manager of its Hartford City, Ind. plant . . . **George N. Keyser** has joined the sales staff of Chippewa Plastics Co. as product sales manager for industrial products . . . Vulcan Containers Inc. has named **Vern I. McCarthy, Jr.** president and director of marketing . . . **Kenneth E. Denson** is now Knox Glass, Inc.'s sales representative, St. Louis area.

Lassiter Corp. has formed a new industrial sales division to be headed by **Earl (Tex) Huston, Jr.**

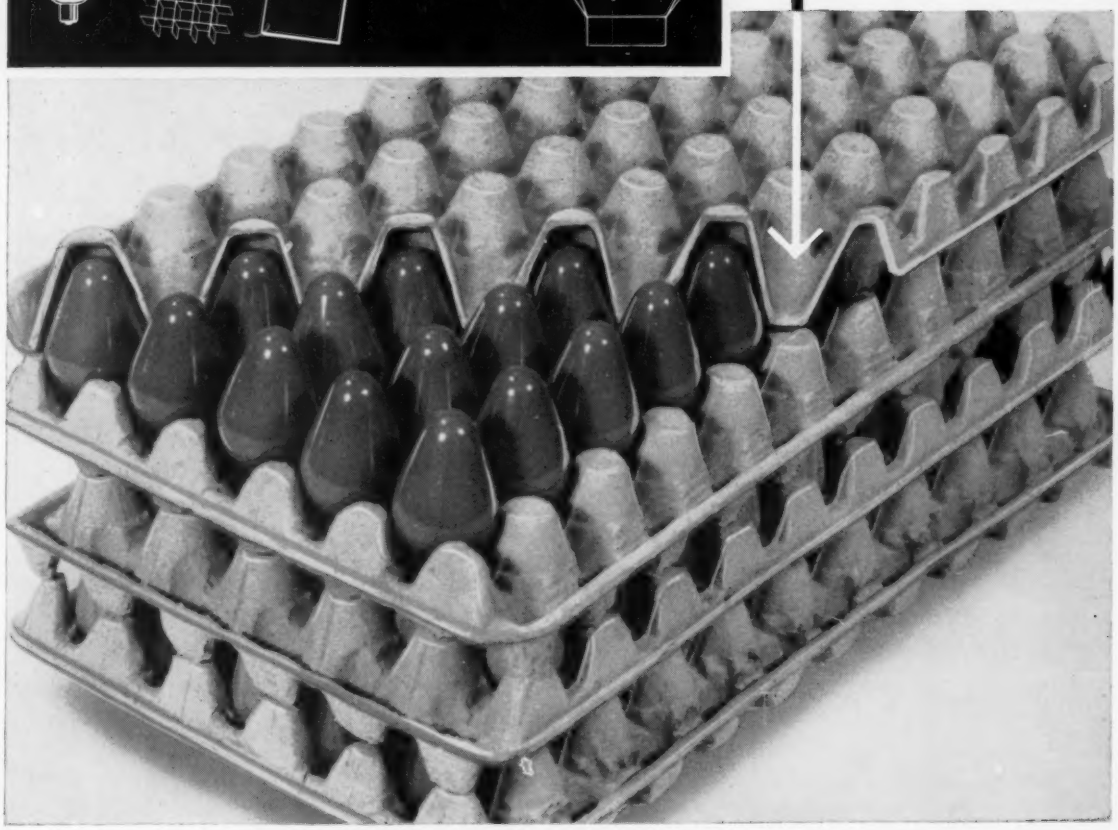
Corning Fibre Box Corp. has appointed **Robert L. Schwyn** sales manager . . . **Melvin R. Whitman** has been promoted to Northwest branch manager of Food Machinery and Chemical Corp.'s Canning Machinery Div. . . . Packaging Corp. of America has named **Robert K. Stolz** to the new position of vice president-forward planning, and **John L. Wilson** vice president of research and development; and at its Wolverine Carton Co. subsidiary, **E. M. Deane, Jr.** has been appointed assistant general manager.

(End)

THE PROBLEM / ALL THESE MATERIALS WERE REQUIRED TO PACKAGE THESE TWO DIFFERENT SIZE CHRISTMAS TREE BULBS . . .



Another problem solved with Keyes Custom Molded Packaging



NOW BOTH SIZE BULBS ARE PACKAGED WITH A SINGLE MOLDED PULP TRAY AND STANDARD BOX

Let Keyes Product Development Engineers show you how to cut costs, cubage and breakage with custom molded packaging

Molded pulp is the one inexpensive packaging that combines rigidity with remarkable cushioning properties. This packaging material can be molded to the shape of your product . . . eliminating the need for set-ups, cell partitions, fillers, pads and loose packing material. If you'd like to learn how Keyes Custom Molded Packaging can cut your costs, cubage and breakage, write:

Product Development Division, Dept. PE-1,

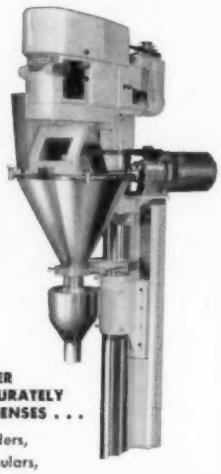
Keyes Fibre Company, Waterville, Maine

KEYES MOLDED PRODUCTS

Machinery for Creative Packaging

CHECKWEIGHER . . .

Speeds to 200 pm
Accuracy to ¼ ounce
Weights up to 2 lbs.
Continuous Motion
Electronic
Will handle most containers . . . open or closed.

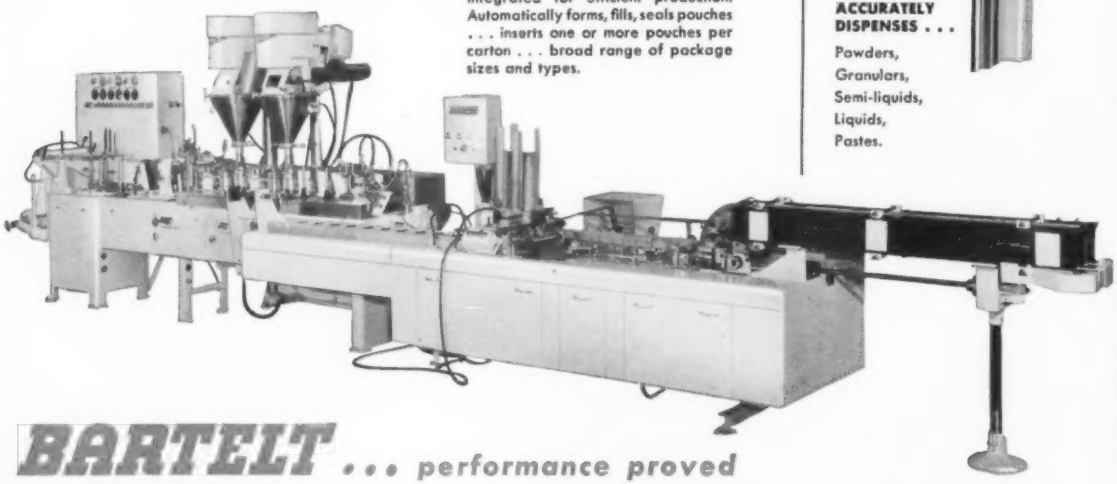


FILLER ACCURATELY DISPENSES . . .

Powders,
Granulars,
Semi-liquids,
Liquids,
Pastes.

A PACKAGING PRODUCTION LINE . . .

Versatile Packager and Cartoner . . . integrated for efficient production. Automatically forms, fills, seals pouches . . . inserts one or more pouches per carton . . . broad range of package sizes and types.



BARTELT . . . performance proved

- **Quality Output** — Bartelt machines consistently provide quality production for many of America's favorite products.
- **Versatility** — Designed for fast change-overs as well as a wide range of package sizes and types; Bartelt versatility is unmatched.
- **Rugged Reliability** — Bartelt machinery has repeatedly been proven capable of meeting the highest production requirements.
- **Minimum Upkeep** — The simplicity, accessibility and ruggedness of Bartelt equipment assures minimum maintenance costs.
- **Custom Engineered** — Each Bartelt machine is designed to meet the customer's specific requirements.
- **Service** — from preliminary analysis of a packaging program, through the complete pre-delivery machine checkout, to the installation-instruction phase directed by experienced Service Instructors, our customers have found that with Bartelt . . . service is a concept.

Where Unfailing Quality Counts

BARTELT ENGINEERING COMPANY

1900 HARRISON AVE., ROCKFORD, ILLINOIS • NEW YORK OFFICE: 370 LEXINGTON AVE., N.Y.C.

For more information circle No. 214 on Reader Service Card, Page 71

*no matter what you wrap

KIMPAK® super crepe

interior packaging KEEPS IT SAFE

You see the darndest things these days . . . products that look as big as the Statue of Liberty . . . products, like transistors, as small as peas. Size is no factor to Kimpak. Whether or not you've the Statue to ship, you and your product will both rest easier when you protect it with Kimpak interior packaging.

TRY KIMPAK FREE

Here is a brand new, low . . . low cost Kimpak material. Called Super Crepe, it gives you regular Kimpak product protection, yet cuts your package cushion costs right down to the bone!

We'll gladly pay for your trial shipment. Use the coupon on the back of this page for your FREE shipping test.

Kimberly-Clark
INTERIOR PACKAGING
KIMPAK

KIMBERLY-CLARK CORPORATION, NEENAH, WISCONSIN

KIMPAK® super crepe

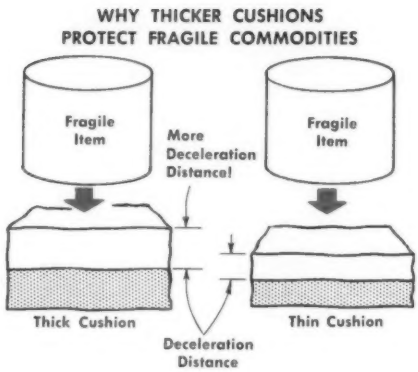
interior packaging

gives more cushioning

The shock and pounding of travel has a punishing effect on both people and products. The sweat, toil, and costs you put into your products can be canceled out during shipment. You can stop needless damage by wrapping your products in Kimpak Super Crepe.

As shown at the right, twice the thickness of cushion gives twice the deceleration distance to reduce impact shock. Result — punishment to your product is greatly reduced. With Kimpak Super Crepe you can afford this.

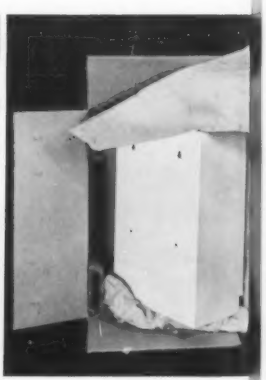
May we show you a demonstration? Send in the coupon and see for yourself.



Instruments, photographic equipment, laboratory goods, projectors.

Glassware, ceramics, chinaware, scientific equipment, electronic tubes, canisters, physicians' samples.

Machine parts, equipment controls, fixtures, aircraft replacement and repair parts, valves, plastic materials.



Painted metalware, furnitur appliances, hardware, polish aluminum, kitchen utensils.

: Kimberly-Clark Corporation, Neenah, Wisconsin

ur product is_____. At no obligation to me:

- ☐ Please arrange to provide sufficient KIMPAK Super Crepe for a test shipment.
- ☐ Bring portable laboratory kit for making shock, thickness, and scratch tests at our offices.

me_____ Title_____

m_____

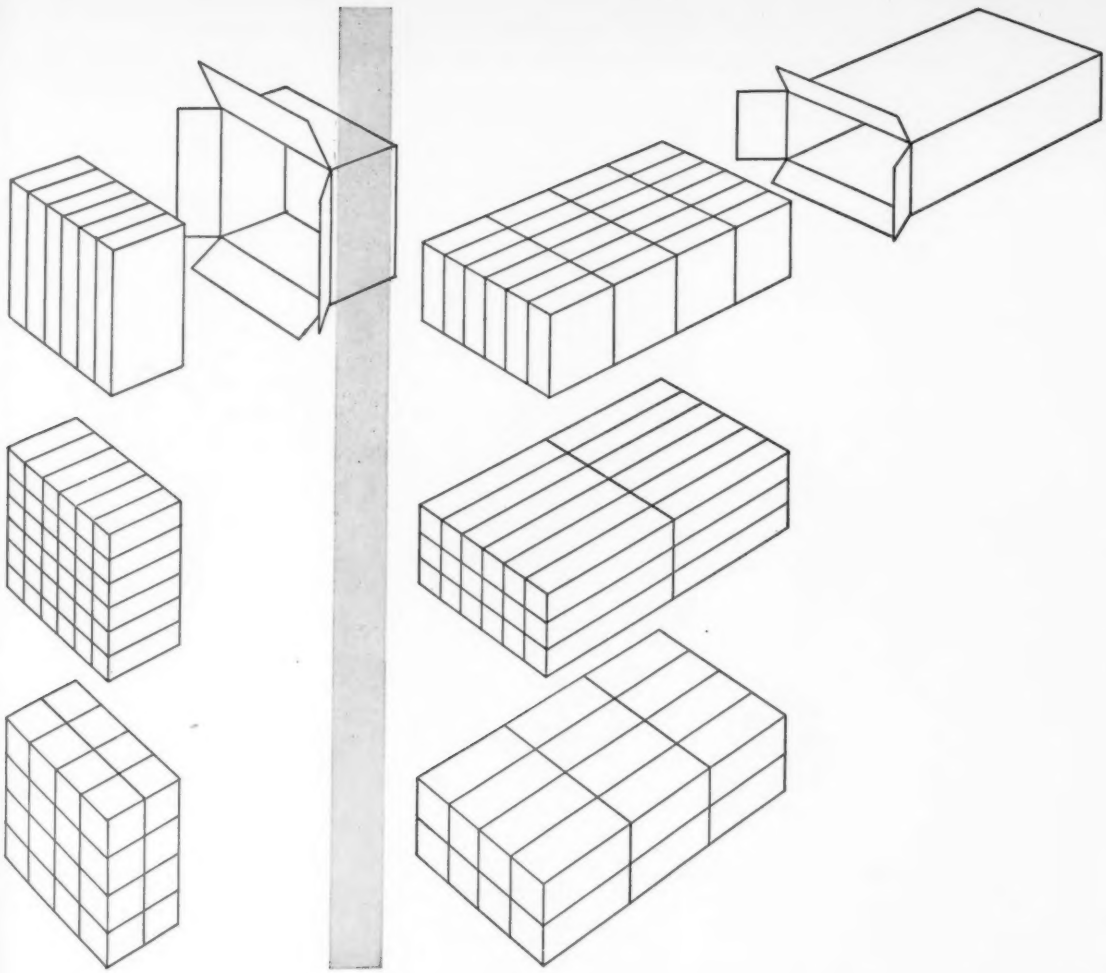
ldress_____

'y_____ Zone____ State_____

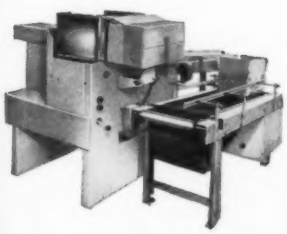
Kimberly-Clark
INTERIOR PACKAGING
KIMPAK

KKD-66

Circle No



Whatever load patterns you want



The patterns above suggest the choices available for automatic, fast loading of cases (end-opening or top-opening) for whatever package type you use — if you select a machine from the Standard-Knapp 800 series. On one of this series, some patterns can be loaded as fast as 25-per-minute. This equipment is so designed that *nothing* can happen that's not right . . . *everything* happens that you do want. Call or write us — or ask one of your competitors' plant superintendents.

EMHART

Emhart Manufacturing Company
Portland, Connecticut
Standard-Knapp Packaging Equipment

For more information circle No. 216 on Reader Service Card, Page 71

Circle No. 215 on Card, Page 71

From the makers of famous LESTOIL comes LESTARE, a new, all fabric dry bleach uniquely packaged in pre-measured, water-soluble packets. The LESTARE box is over-wrapped in Dobeckmun Metalseal ...chosen for its exceptional moisture protection and exciting package design qualities.

packages for performance

DOBECKMUN

Dobeckmun Metalseal gives maximum protection against moisture while at the same time affording an exceptional printing surface and a unique metallic appearance. A union of aluminum foil and wax impregnated paper, Metalseal packaging is a product of Dobeckmun's long experience with special laminations, package design and creative printing... is but one of a wide variety of exciting and practical packages for performance developed by The Dobeckmun Company, a Division of The Dow Chemical Company, Cleveland, Ohio • Berkeley 10, California • Offices in most principal cities.

NOW THERE ARE 7 THERMOGRIP

Hot melt adhesive applicators

Low cost, compact unit makes instant-set adhesives available to wider range of uses

Clean, fast, no-waste THERMOGRIP adhesives can now be used in an even broader range of applications with the new THERMOGRIP Applicator Model DN. Compact, low cost, and versatile, the Model DN is the seventh and latest addition to the line of THERMOGRIP applicators for melting and applying instant-set THERMOGRIP adhesives.

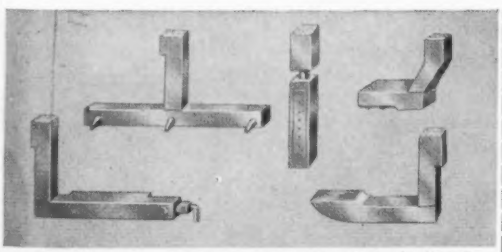
Waste is eliminated because cord-like THERMOGRIP adhesive is metered in automatically only as used. Just the right amount of adhesive is applied for each job. Nozzles for the Model DN can be varied to provide wide variety of application patterns: round beads, wiped or thinly wiped wide bands, narrow bands or widely spaced individual lines — in widths from 3″ to 1/16″. THERMOGRIP adhesive can be applied upward or downward, or to vertical or angled surfaces.

Easily adapted to a wide range of processing equipment, the Model DN THERMOGRIP Applicator is used for joining a wide variety of paper, foil, and hard to bond treated surfaces. Applications include side seaming and end closing in bag making, applying of plain paper tapes and many products used in automotive, apparel, food processing, and building industries.

The nozzle illustrated on the applicator is especially designed to produce economical moisture-proof, sift-proof, tape-over-stitching closures for multiwall bags. For complete information on THERMOGRIP adhesives and applicators send coupon today.

United

UNITED SHOE MACHINERY CORPORATION
140 Federal St., Boston 7, Massachusetts
Liberty 2-9100



A few of the many nozzle designs available to tailor the Model DN hot adhesive applicator to your job. Other models use wheels to apply desired patterns. Large, medium, and small capacities give you just the capacity you need.

United Shoe Machinery Corporation
140 Federal Street, Boston 7, Massachusetts

Please send me the following material:

- ☐ Complete information on Model DN
- ☐ New folder on tape closures on multiwall bags
- ☐ New general catalog on Thermogrip adhesives and applicators

Name.....Title.....

Company.....

Address.....

City.....Zone.....State.....

Circle No. 217 on Card, Page 71

Z-I-P!

IT'S OPEN IN A JIFFY!

JIFFY PADDED SHIPPING BAGS

Completely Redesigned!

- ★ Tear Tape Opener—
- ★ Golden Clupak* Outer Liner—
- ★ New Bag Construction—
- ★ NO PRICE INCREASE!

Write for your free sample today!

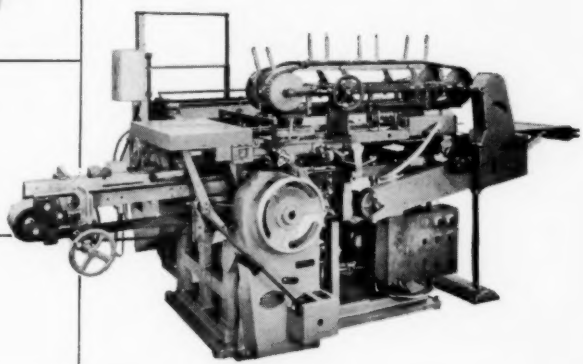
JIFFY MANUFACTURING COMPANY

363 FLORENCE AVENUE HILLSIDE, NEW JERSEY

Jiffy

* Clupak, Inc.'s trademark for stretchable paper.

NOW UP TO 120 PACKAGES A MINUTE on the PACKAGE Model FA



For consistently neat, attractive wrappings, the Package Model FA now gives you speeds up to 120 packages a minute in the smaller sizes. One machine assures top daily output on cartons, trays or specialty items. Size changes require only minutes time, and another roll of wrapping material can be inserted in less than five minutes. An electric eye mechanism gives you the most accurate registration possible, with automatic paper stop to control feeding.

WRAP WITH POLYETHYLENE TOO! Special features on the FA assure trouble-free operation when wrapping poly. All FA parts in contact with the poly covered packages are Teflon coated to prevent drag. Thin Fiberglas belts—an exclusive Package application—cover flexible side heaters and coolers for fast positive sealing of the double-point end folds.

For full details on wrapping with polyethylene and the Model FA contact your nearest PACKAGE representative.

compare these features

MATERIALS: FA glues or heat seals. It can handle waxed, sulphite or Kraft paper, cellophane, glassine, polyethylene and reinforced foils.

SIZE RANGE: For Model FA, 2″ to 11½″ L, 1⅛″ to 5⅝″ W, ⅜″ to 3½″ H. Models FA-2, -3 and -4 will handle larger packages.

PAPER FEEDS: Both roll and sheet feed is available.

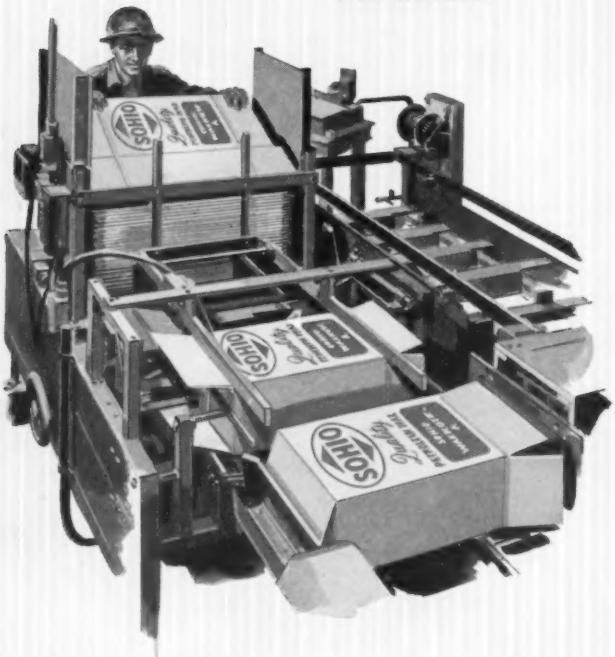
END FOLDS: Double-point end fold is standard; reverse double-point fold, single- or double-point turned-under fold, crimp seal and special folding for extension edge boxes also available.

ATTACHMENTS: Easy-opening tape, medallion and code dater attachments available.

PACKAGE

PACKAGE MACHINERY COMPANY, EAST LONGMEADOW, MASS.
NEW YORK • PHILADELPHIA • ATLANTA • BOSTON • CLEVELAND • CHICAGO • KANSAS CITY
DALLAS • DENVER • LOS ANGELES • SAN FRANCISCO • SEATTLE • TORONTO • MEXICO CITY

These boxes do everything but balk...



H & D corrugated boxes for shipping Sohio wax start through this machine knocked down. They're set up, packed and sealed—automatically. Would precision packaging speed up your operations? Better see H & D.

Hinde & Dauch Division

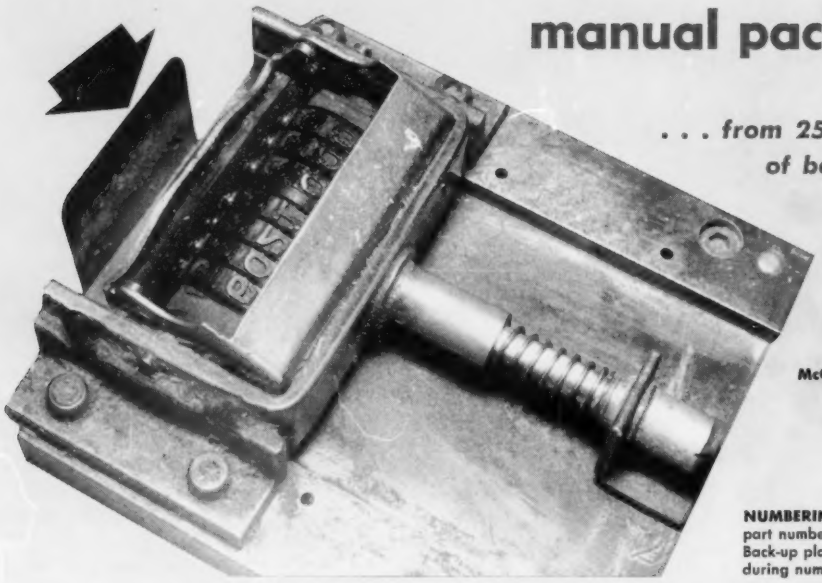
West Virginia Pulp and Paper

Authority on Corrugated Packaging • Sandusky, Ohio
17 Factories • 42 Sales Offices

Air-operated numbering machine speeds up manual packaging . . .

. . . from 250 to over 500 pairs of bearings per operator per hour

By Marion T. Smith,
Project Engineer,
McQuay-Norris Manufacturing Co.,
Indianapolis



NUMBERING MACHINE imprints part numbers on cartons for bearings. Back-up plate (arrow) provides rigid backing during numbering operation.

Some products do not lend themselves to high-speed automatic packaging – due perhaps to numerous size variations each of which is produced in small quantities. One such an item is a connecting rod bearing, and the only practical way to package it is manually. But, the operation can be speeded up. Mr. Smith tells how his company designed and built packaging "tables" and incorporated a conventional hand numbering machine – modified to operate by an air cylinder – for imprinting part numbers on the cartons.

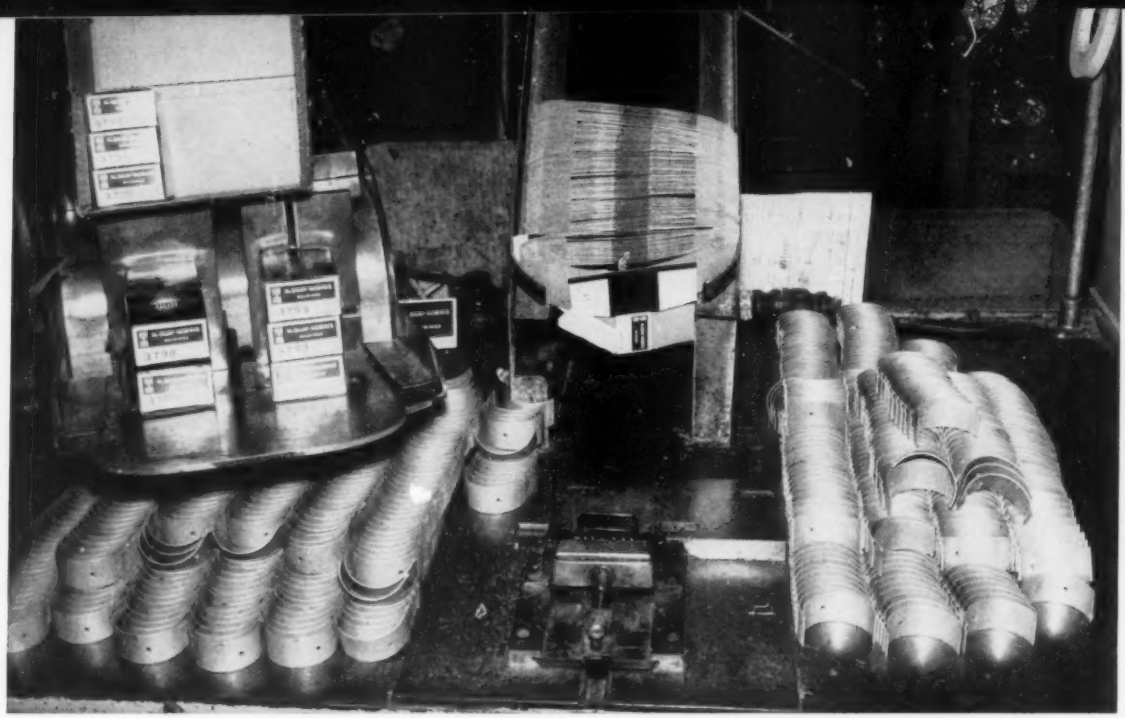
We have more than doubled our rate of packaging connecting rod bearings by developing and building a special piece of equipment for each of our packaging line operators. At each station, the girl manually packs one pair of matched bearings in a straight-tuck folding carton, codes the carton with the part number, and packs the filled cartons six to a sleeve. **The increased rate of speed is due mainly to the method we devised for numbering.**

Although we produce thousands of pairs of these bearings a day, there are many different sizes (they vary in increments of 0.001 in.) each of which has its own part number. The demand for one given size is usually small; hence, our production schedule calls for small quantities of each size—perhaps only 100 pairs at a time.

Automatic Cartoning Not Practical

We have attempted over the years to use automatic cartoning machines. However, with over 6200 different items, each being produced in small volume, it has not been practical mainly from the standpoint of numbering the cartons and being assured that the bearings packed within were the proper ones.

Previously, one girl could package about 250 pairs/hr. She used a conventional hand numbering machine for imprinting the part number on the quantity of cartons needed for one size bearing—maybe 50, or maybe 200. She then packaged one pair per carton. This procedure was slow and there was always a chance that some of the cartons she had numbered might become mixed up, in which case the wrong size bearing could eas-



2 PACKAGING "TABLE" AS VIEWED BY OPERATOR. Note convenient arrangement of items. Bearings are lined up on either side of numbering machine to let operator pick up a bearing with each hand as she packs carton.

ily have been packaged by mistake.

Our present equipment with the numbering machine (see Fig. 1) attached, prevents this chance for error because each carton is numbered at the moment the girl is placing one pair into it. This feature is also the main reason for our more than doubling our packaging rate—one girl now packages over 500 pairs/hr.—since it eliminates the old operation of numbering the cartons prior to packing.

"Table" Is Convenient

One of our packaging "tables" is shown in Fig. 2, as viewed by the operator when she is at work. **Note the convenient arrangement of the items she uses**—the product, the numbering machine, the carton magazine, the platform and jigs which hold the sleeves, and the corrugated container into which the packed sleeves are placed.

The bearings are lined up on either side of the center portion of the table. This allows the operator to pick up one bearing with each hand as she packs a carton.

Numbering Machine Is Air-Operated

The numbering machine is of a conventional hand-numbering type, mounted horizontally in the center, and at the front edge, of the table so that it is immediately in front of the operator. When the operator has a carton in position on the back-up plate and is packing a pair of bearings into the carton, she presses a foot pedal which operates an air cylinder connected to the numbering machine. The cylinder forces the numbering machine forward, thus stamping the number onto the carton.

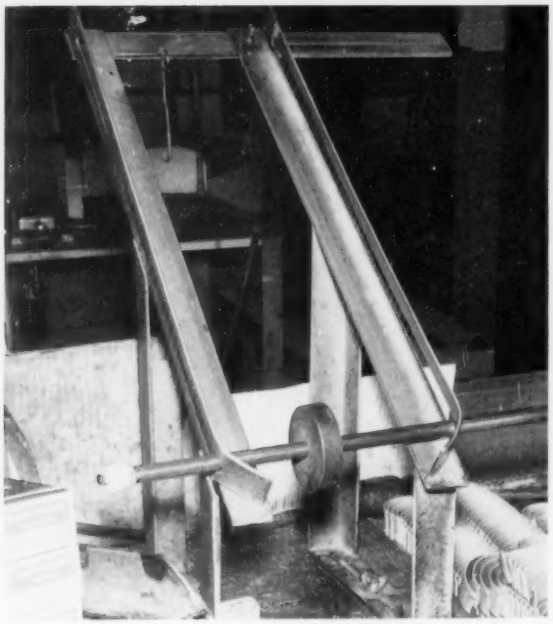
Compare the position of the numbering machine in Fig. 1 with that in Fig. 8. Note that in Fig. 1 the spring on the shaft is visible, but in Fig. 8, it is compressed and not visible, at which moment the number is being stamped onto the carton.

The Carton Magazine

The magazine (see Fig. 3) for holding the empty carton supply is simple in construction and was built from ordinary strap iron. The cartons are always loaded in the same manner, with the front panel of the carton facing the operator, and with the top opening of the carton to her right. (See Fig. 4.) **This position makes it simple and convenient for the operator to remove one carton at a time with her right hand,** as will be noted in Fig. 5.

Although the magazine was simple to construct, the tricky part was in getting the proper bend at the lower end of the two side rails, so that the cartons could be re-

Marion T. Smith was graduated from Arsenal Technical High School, Indianapolis, after which he joined McQuay-Norris. He has been with the company 25 years, working mostly on packing problems, and was at one time supervisor of the packaging department.



3 **EMPTY-CARTON MAGAZINE** is of simple strap-iron construction. Proper bend at lower end of side rails facilitates carton removal.

4 **CARTONS ARE ALWAYS LOADED IN SAME MANNER,** with front panel of carton facing operator, and with top opening to her right.

moved easily, but only one at a time. This was more or less trial and error. Note that the magazine is adjustable for different size cartons.

Since the operator removes an empty carton from the magazine with her right hand, we located the platform which holds the sleeves, at her left. **Thus, using her left hand, she can be placing a packed carton into the sleeve at the same time her right hand is selecting another empty carton for the next pair of bearings.**

How "Table" Is Used

Figs. 5-10 show the packaging of one set of bearings from start to finish. A quantity of one size of bearings is supplied in a tote box to the packager, and she arranges them on the table as shown in Fig. 2. She makes certain that the magazine is loaded with the proper size cartons.

She selects a carton from the magazine, by putting her middle fingers into the top of the carton, and flicks it open. (See Fig. 5.) She then folds in the bottom flaps and tucks the bottom panel closed. (See Fig. 6.) To position the carton for filling and numbering, it is necessary for her to set it down so that **the backing plate of the numbering machine slides between the front panel and the tuck flap of the bottom panel.** (See Fig. 7.)

Change To Straight-Tuck Carton

It is interesting to note that, with our old method of packaging, we used a reverse-tuck carton. With the present equipment, however, the reverse-tuck style could not be used since it did not allow positioning of the front panel on the backing plate. For this reason, we changed to a straight-tuck style.

After the carton is in position for packaging the bearings, the girl picks up one pair of bearings—one bearing in each hand—and places it into the carton. (See Fig. 8.) At the moment she is inserting the bearings, she presses the foot pedal which activates the numbering machine, thus imprinting the part number on the carton.

Note in Fig. 8 that the numbering machine is in the forward position, and in Fig. 9 has returned to its normal place. You can see the numbers "3798" which the machine has stamped on the carton. (See Fig. 9.)

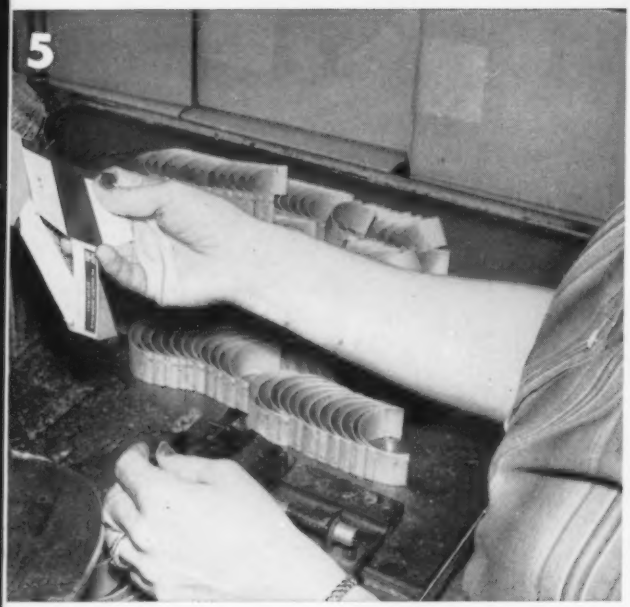
Carton Has Built-In Divider

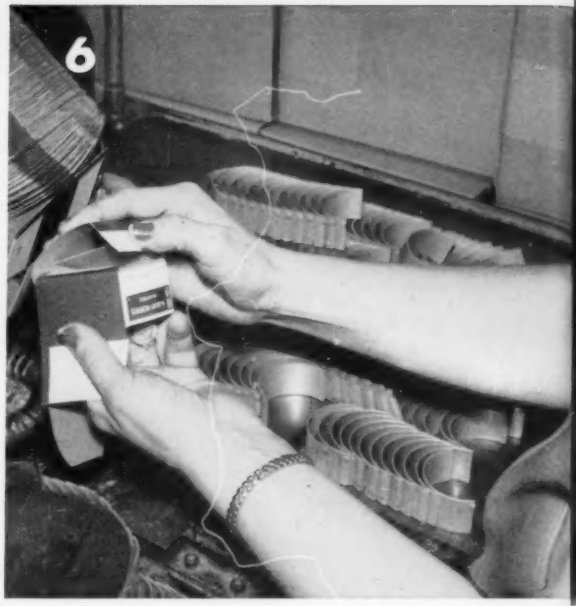
Note in Fig. 8 the built-in divider in the carton. This divider is a part of the carton and pops into place when the carton is first being set up. Its purpose is to keep the two bearings separated so that they will not scratch one another. **Having the divider built in eliminates a packaging item and the need of the girl's having to insert it.**

Closing the carton (see Fig. 9), the operator removes it from the backing plate with her left hand and places it into a sleeve on the platform to her left. Simultaneously, with her right hand, she removes another carton from the magazine preparatory to packaging the next pair of bearings. (See Fig. 10.)

Has "Stop" For Empty Sleeve

Note in Fig. 10 that there are two sleeves resting on the platform at the operator's left. Also note that the three individual cartons in the right sleeve project out of the





sleeve about ½ in., whereas in the left sleeve the carton is flush with the front edge of the sleeve. The right position is where the operator sets up a new sleeve.

Protrusion of the cartons in the right sleeve is caused by a "stop" which is a part of the platform structure and keeps the first tier of cartons from being pushed to the back end of the sleeve. **This feature prevents the operator's putting more than three cartons in an empty sleeve from the same end of the sleeve.**

Want All Front Panels Visible

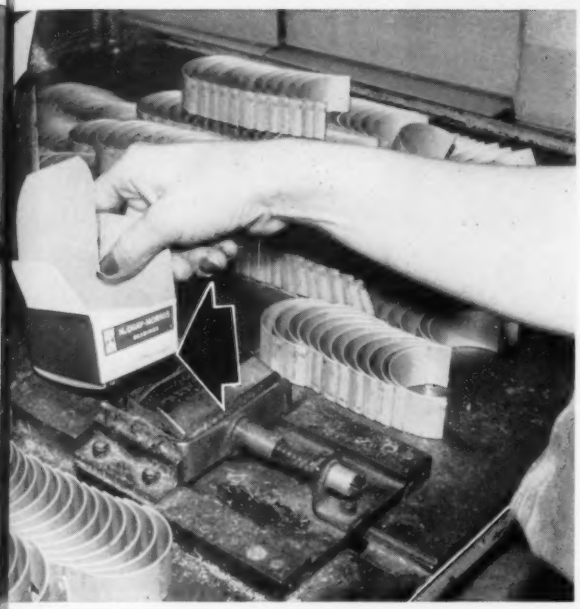
The reason for this is that we want the front panels of the six cartons in one sleeve to be visible —three panels showing from either end of the sleeve. If we did not have the stop arrangement, the operator would be inclined to push the first tier of three cartons to the far end of the sleeve and then place another tier in front of it. This would mean that all of the front panels would be facing the same direction and the part numbers would not be exposed at but one end of the sleeve.

To obtain visibility of all six pan-

8 OPERATOR PLACES PAIR OF BEARINGS into carton; at same time presses foot pedal, activating numbering machine, imprinting part number. Built-in divider (arrow) keeps bearings separated, eliminates packaging item.

9 CLOSING CARTON AFTER PACKING, operator transfers it, with left hand, from back-up plate to sleeve on platform at her left. (See Fig. 10.)

10 WHILE PLACING PACKED CARTON IN SLEEVE (with left hand), girl selects empty carton (with right hand) from magazine, ready to pack next pair of bearings. When sleeve is filled, she puts it into case above platform.



5 **OPERATOR SELECTS CARTON FROM MAGAZINE,** by putting middle fingers into top of carton, and flicks it open.

6 **FOLDING IN BOTTOM FLAPS,** she tucks bottom panel closed preparatory to positioning carton for filling and numbering. Note carton is straight-tuck style to allow placing *front* panel over back-up plate. (See Fig. 7.)

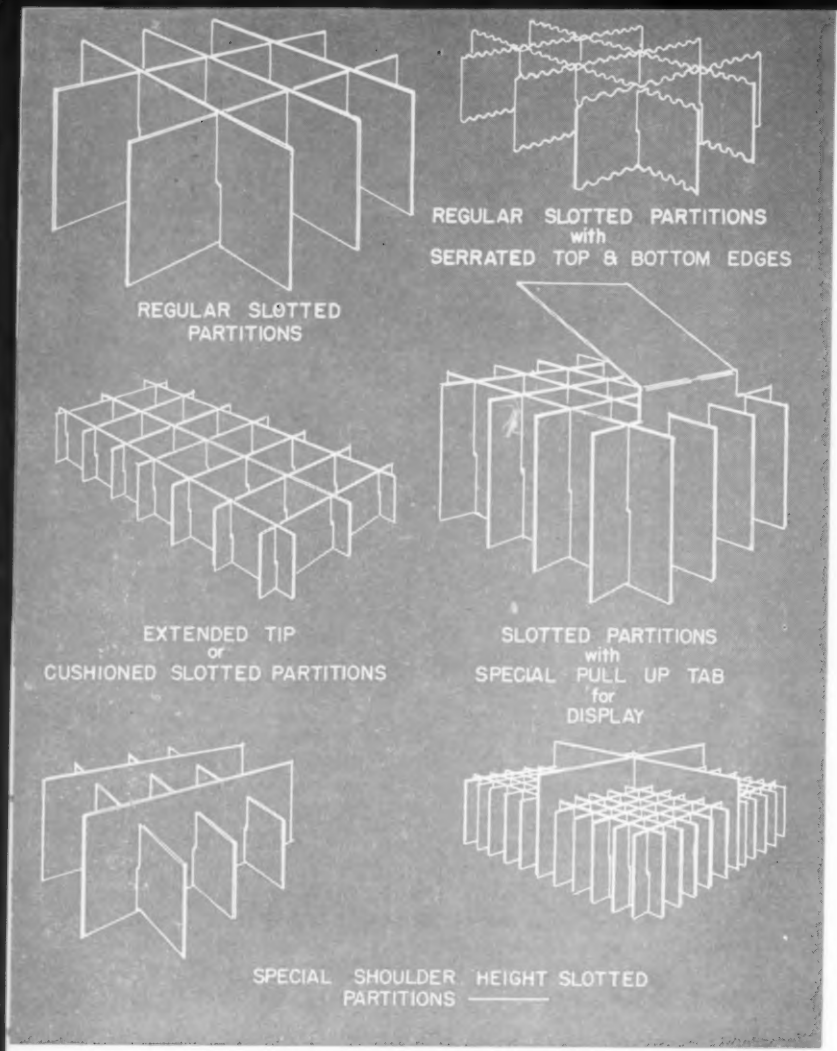
7 **PLACING CARTON OVER BACK-UP PLATE** (arrow), operator has completed carton set-up operation, and is ready to pack and number carton. Back-up plate must be between front panel and tuck flap of bottom panel to provide rigidity while numbering. (See also Fig. 1.)

els, without the stop, the operator would have to always turn the first three cartons so that the front panels were facing away from her before she pushed them into the sleeve; then place the second tier of three into the sleeve with the numbers facing her.

Operator Saves Motions

As it is now, after she packs three cartons in the front end of the right sleeve, she then merely removes the whole sleeve, turns it around, and places it toward the left of the platform as shown in Fig. 10. She then continues to fill the sleeve completely with the second tier of cartons. **In essence, this arrangement saves her motions in that she never has to turn half of the individual cartons around.**

When a sleeve on the left side of the platform is filled with the second tier of cartons, the operator removes it from the platform and places it into the corrugated shipper located immediately above the platform. Turning around the half-filled right sleeve, she places it in the left position. She then picks up an empty sleeve and sets it over the stop at the right. (*End*)


REGULAR SLOTTED PARTITIONS
REGULAR SLOTTED PARTITIONS with SERRATED TOP & BOTTOM EDGES
EXTENDED TIP or CUSHIONED SLOTTED PARTITIONS
SLOTTED PARTITIONS with SPECIAL PULL UP TAB for DISPLAY
SPECIAL SHOULDER HEIGHT SLOTTED PARTITIONS

1 **SLOTTED PARTITIONS** make up one type of interior structure which probably protects more products than all other forms of interior packaging combined. Made from many different materials, partitions are fabricated in variety of constructions, are used for numerous purposes.

Understanding slo

By Edwin S. Worden *Edwin S. Westpor*

Of the billions of dollars worth of merchandise which can be shipped safely each year because of protection provided by interior packaging and packing, one type of interior protective structure probably protects more units than all other forms of interior packaging and packing combined. These protective structures, known as slotted partitions (slotted or die-cut sheets of material that are interlocked to form cells), not only protect a high percentage of the 5-billion-dozen eggs shipped each year and most of the chemicals, beverages, and foodstuffs packaging in approximately $800 million worth of glass containers, but also assure the safe arrival of thousands of other items ranging from candy, cookies, and milk, to loud speakers, motors, and kitchen utensils.

Although these slotted partitions are used for numerous reasons, can be made from many different materials, and are fabricated in a variety of constructions, the packaging engineer seldom has enough published information on the subject which will help in selecting, designing, and specifying them. With the hope of filling this void, this article has been written.

Slotted Partition Uses

Slotted partitions can be considered for one or more of the following applications:

1. To separate and/or cushion fragile articles from damage during storage, handling, and/or shipment.
2. To separate articles that are subject to surface damage such as precision parts, products in labeled containers, motors, and so on.
3. To increase the stacking strength of a container.
4. To compartmentalize bulk packs.
5. To provide economical filler pieces.
6. To display merchandise.

There are undoubtedly other applications where slotted partitions can be used to advantage.

Types Of Slotted Partitions

In general, slotted partitions may be grouped as follows:

1. Regular full-height slotted partitions. All partition pieces are the same height and, with few exceptions, the height of the partition is equal to the maximum dimension of the part being packed.

2. Partial- or shoulder-height slotted partitions. These are generally constructed with one or more full-height key pieces to hold the shorter pieces in position. For some purposes, they provide approximately the same protection as the full-height partition and cost less.

3. Cushioned, bumper-cell, or extended-tip partitions. These slotted partitions have small cells around the perimeter of the assembly which provide extra protection to very fragile articles by keeping them away from the sidewalls of the container. They may be either full height or shoulder height.

4. Diagonal partitions. Whereas the cross section of the cells for the first three types is rectangular or square, the cell cross section of diagonal partitions is triangular.

There is much more to proper specification and use of interior partitions than meets the eye. Considering that there are five types, fabricated from ten materials of construction, for at least six different general purposes, and made in a wide variety of cell patterns, then we realize that, for the packaging engineer, selecting the right partition is a serious undertaking.

slotted partitions

Edwin S. Worden & Associates,
Westport, Connecticut

5. Special constructions. These constructions may be used for fillers, displays, or other purposes.

These various constructions are illustrated in Figs. 1, 2, 3, and 4.

Regulatory Requirements

Whenever they are applicable, requirements of government or other agencies must be taken into consideration not only when deciding whether or not to use slotted partitions, but also when selecting the materials and constructions to be used. In this connection, it should be borne in mind that minimum requirements are generally specified and that it may be necessary to exceed these minimums for protective or other reasons.

Among the publications listing partition requirements of the regulatory bodies are:

1. *Uniform Freight Classification.* This publication covers the packing requirements for articles shipped by rail freight. Particular attention should be paid to the packing requirements listed in Section 5, Rule 41, covering glassware, other fragile articles, or articles in glass or earthenware in fibreboard boxes. Copies can be obtained through Official Classification Committee, 1 Park Avenue, New York 16, New York; Western Classification Committee, 202 Union Station, Chicago 6, Illinois; Southern Classification Committee, 101 Marietta Street, Atlanta 3, Georgia; and Illinois Freight Association, 236 Union Station, Chicago 6, Illinois.

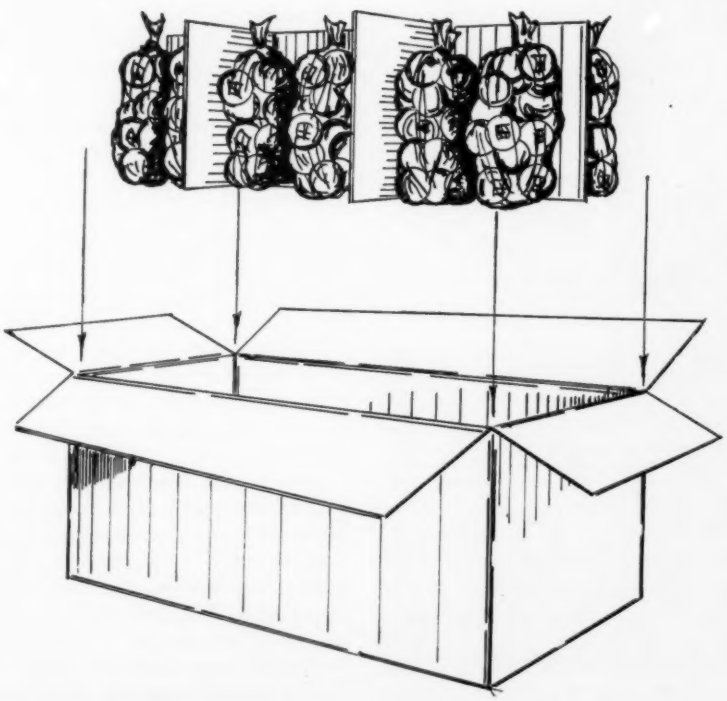
2. *National Motor Freight Classification.* Packing requirements for motor freight shipments are covered by this publication. The main references to partitions in this publication are in Rule 5, Section 2, which covers the shipment of glassware, articles in glass or earthenware, or fragile articles in fibreboard boxes. Copies can be obtained from F. G. Freud, Issuing Officer, 1424 Sixteenth St., N.W., Washington 6, D. C.

3. *Interstate Commerce Commission Regulations for Transportation of Explosives and Other Dangerous Articles by Land and Water in Rail Freight Service and by Motor Vehicle (Highway) and Water including Specifications for Shipping Containers.* Issued by H. A. Campbell, Agent, 30 Vesey Street, New York 7, New York. Although it does not contain any specific section on slotted partitions, this publication should be checked whenever explosive or dangerous articles are to be shipped.

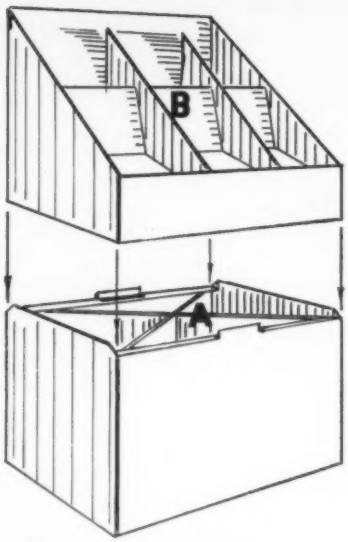
4. *Postal Manual.* Issued by United States Post Office Department, Washington, D. C. This manual includes general requirements for wrapping and packing articles for mail and parcel post shipments, but contains little detailed information on slotted partitions.

Materials

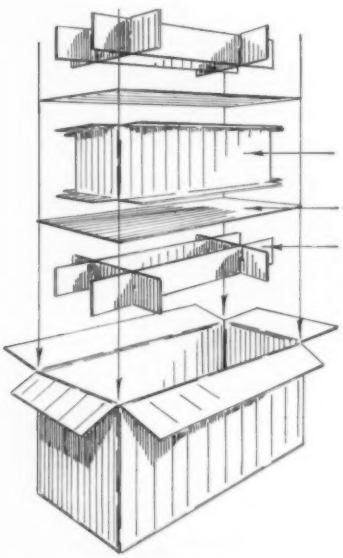
Table I contains a list of various materials from which slotted parti-



2 INTERIOR PACKING ASSEMBLY using slotted partitions as bulk dividers. Partitions must fulfill their principal function—protect products from abrasion, supply adequate support.



3 **ECONOMICAL FILLER PIECES,** slotted partitions simultaneously provide support (A); also, certain types of partitions may be used to form special compartments (B).



4 **SETS OF PARTITIONS** (lower arrow) may be used as fillers. Note that flanged tube (top arrow) (containing product) is separated from partitions by pads (center arrow).

TABLE I
Slotted Partition Materials

Material	When Used	Factors To Consider
Plain chip or news board	For relatively lightweight articles, not requiring high degree of cushioning and when appearance is not considered detrimental from sales viewpoint.	a. Bending or non-bending board. b. Caliper and weight of board. c. Odor, taste, surface, chemical and physical properties when important.
Single- or double-lined chip or news board.	Same as above except when appearance is important.	Same as above. Also type of lining or coating, i.e., bleached manila, patent coated, clay coated, etc.
Solid kraft, sulfite or other boards.	Same as for plain chip or news. Also when greater strength is required and/or appearance is considered important, and/or when special odor, taste, chemical or physical properties are required.	Same as for plain chip or news. Also type of board, bleached or unbleached, chemical and physical properties.
Coated board	Same as above and when additional properties, such as grease resistance, non-abrasiveness, etc., are required.	Same as above. Also type and thickness of coating (i.e., sodium silicate, wax, polyethylene, etc.).
Laminated board	Same as above and when other features such as grease resistance, appearance, strength, etc., are important.	a. Component materials. b. Laminating materials. c. Odor, taste, chemical, physical and other properties.
Corrugated fibreboard.	For heavier and/or more fragile articles, displays, fillers, etc. Provides good separation and cushioning.	a. Bursting strength. b. Type and direction of flutes. c. Component materials. d. Natural kraft or colored liners.
Solid fibreboard	For heavier and/or more fragile articles, displays, fillers, etc. Provides good separation, but less cushioning than corrugated. Also generally more expensive than corrugated and heavier.	a. Caliper and weight/M. sq. ft. b. Bursting strength. c. Grain direction. d. Color. e. Water resistance if important.
Wood (including plywood)	Heavy articles, tote boxes, reusable containers, etc.	a. Thickness. b. Species. c. Moisture content. d. Regular or waterproof adhesives if plywood.
Aluminum, stainless steel, etc.	Ice trays, tote boxes, displays, etc. Rarely for packing.	a. Kind of metal. b. Thickness or weight/M. sq. ft. c. Chemical and physical properties. d. Color.
Plastic materials—cellulose acetate, ethyl cellulose, polystyrene, etc.	Lightweight, relatively non-fragiles, displays, etc.	a. Material. b. Gauge or thickness. c. Color.

tions are made. It also includes information indicating when each material may be used and various factors that should be considered.

Cell Arrangement

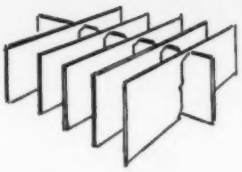
When there is a choice between several different cell arrangements, say, 2x6, 6x2, 3x4, or 4x3, consideration should be given to the selection of the best arrangement for the purpose. Not only may the cell arrangement affect the cost of the partitions, but it may also have an important bearing on the packing labor costs and protective qualities. For example, several possible arrangements are illustrated in Fig. 5. The 2x6 and 6x2 arrangements may be preferable from a display viewpoint, but may be flimsy and require more packing labor. In general, the more nearly square arrangements (3x4, 4x3, and so on) are less costly, provide greater protection, and are easier to pack.

At least one company has been able to eliminate one packer from several of its lines by changing from a 6x2 to a 4x3 arrangement because the latter was easier to pack.

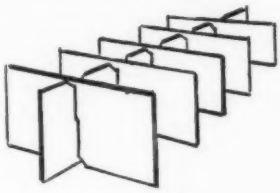
Cell, Partition Size

To obtain the maximum protection, snug fits should be provided between the products and the individual cells and, also, between the partitions and the containers in which they are placed. The degree of "snugness" may have to be a compromise between that desired for protective reasons and that dictated from an ease of packing viewpoint.

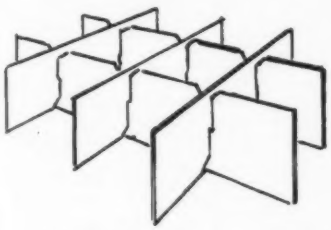
As a general rule, the overall length and width of the partitions should be about ½-in. less than the inside length and width dimensions



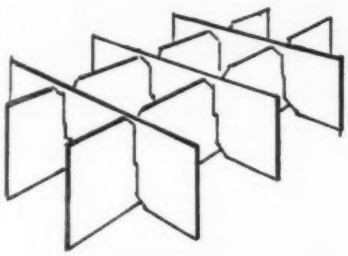
2 x 6



6 x 2



3 x 4



4 x 3

5 **BEST CELL ARRANGEMENT** should be selected. Those 2x6 and 6x2 may be better for display, but frequently require more packing labor; 3x3 and 4x3, more nearly square, are usually less costly and easier to pack.

of the container. Less allowance should be permitted between the item being packed and the inside dimensions of the cells.

In one instance where partitions were too small for the container in which they were placed, the chipboard partitions were being considered as a replacement for corrugated fibreboard partitions. However, when the chipboard partitions were ordered, the cell size and cell arrangement were specified (as well as the type and thickness of board), but someone neglected to order new containers of a smaller size to fit the new partitions. (See Fig. 6.)

The overall dimensions (length and width) of the chipboard partitions were less than for those made from double-face corrugated fibreboard, with the result that the new partitions did not fit properly and the cells were distorted. The distorted cells were difficult to pack, thereby slowing down the production on the packaging line. This objection was overcome by reducing the container size so that the partitions fitted more snugly and the cell shape was more nearly rectangular.

Slot Design

At times, consideration should be given to the design of the slots. For example, slots may be rectangular or die-cut. Advantages claimed by one supplier for its die-cut partitions are:

1. Greater uniformity of cell sizes.
2. Elimination of most of the lint and dust, thereby providing cleaner partitions and interior packages.
3. Prevention of the partition components from falling apart during handling, thereby eliminating loss of time and material on the production line.

Other Factors

While many of the factors described above affect the cost of the slotted partitions, these factors are concerned primarily with making sure that the partitions fulfill their principal function, namely, protecting the products from damage or abrasion, supplying sufficient support in the case of filler pieces, and so on.

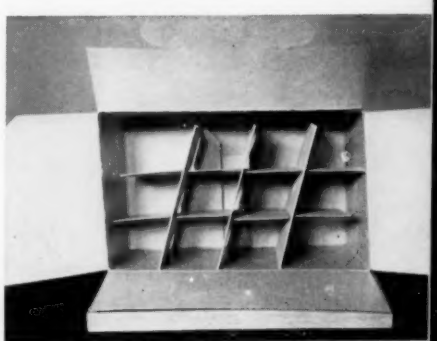
Other considerations, which influence the costs, but have little or no effect on the functional properties of the partitions, should also be taken into account. They include:

1. Economical ordering quantities.
2. Determining whether to buy or make the partitions.
3. Packing and marking requirements.
4. Selection of suppliers.

Up to a point, unit costs generally decrease as the ordering quantity increases. Consequently, an effort should be made to establish optimum ordering quantities with due consideration to the purchase price per thousand, annual requirements, storage and handling charges, the possibility of specification changes or obsolescence, transportation costs, and so on.

Make Or Buy?

Unless large quantities of a relatively small number of sizes are required annually, it is generally not worthwhile for a company to make its own partitions. However, when annual requirements are substantial—especially when there are only a few sizes—consideration might be given to the purchase of equipment for making the partitions. Such equipment takes the paperboard stock from two rolls,



6 **PARTITIONS MUST FIT CASE.** Too small, they tend to collapse, cells distort, making packing difficult and labor costly.

Edwin S. Worden is a graduate of Massachusetts Institute of Technology with a B.S. degree in business and engineering administration. He also has an M.B.A. degree from New York University. He began his consulting work in 1937. During World War II he was a packaging specialist in the Office of the Quartermaster General. After the war he joined Container Laboratories, Inc. as vice president, and worked on packaging and packing problems. In 1951 he formed his own consulting company. He has received the War Department's Commendation for Meritorious Civilian Service. Memberships include TAPPI, ASTM, Packaging Institute (professional member), ASME, and U.S. Naval Institute.

slits, dies out, and assembles the partitions automatically in one operation. One manufacturer* of equipment for making partitions has supplied the following data concerning these machines:

1. Space requirements: 23 ft. 6 in. long by 4 ft. 3 in. wide.
2. Size range: Made in three depth ranges, namely, 1 to 3½ in., 3 to 7¼ in., and 6 to 10 in.
3. Production speed: 100 to 120 inserts/min.
4. Changeover time: 4 hr.
5. Number of operators required: One.
6. Thicknesses of paperboard handled: 0.020 to 0.060 in.

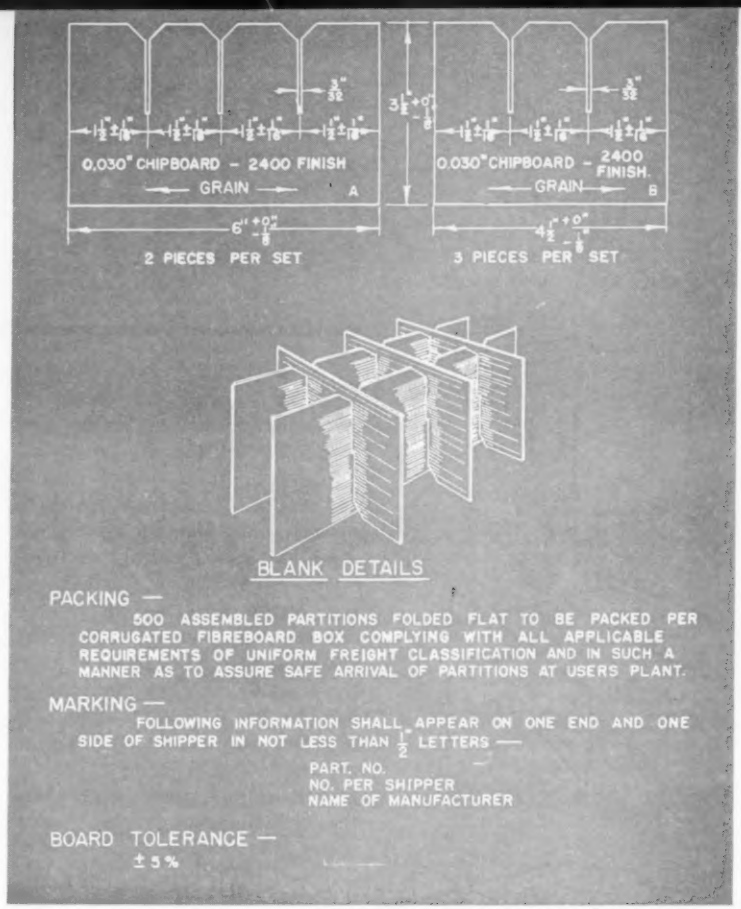
If the total annual requirements for partitions are substantial, but a large number of different partition sizes are required, consideration might be given to the purchase of equipment for slotting the partitions, and manual assembly. The Marquette partition slotter† can cut both "Y" entries and slots for automatic or hand-assembled partitions. It is understood this machine can handle chipboard blanks ranging from 1 in. high by 3 in. long to 13 in. high by 32 in. long, with a minimum height for corrugated fibreboard blanks of 2 in. Maximum slot depth is reported to be 7 in. and minimum slot spacing is ¾ in. on centers.

Alternative Method

Another alternative would be to cut the slots on a partition slotter, and assemble the partitions automatically in a separate operation. Corrugated fibreboard partitions can be assembled automatically on equipment such as Huntingdon or Porter partition assemblers.‡ Model B-12 Porter partition assembler will assemble A-, B-, or C-flute double-face board, AB- and CC-flute double-wall board, nontest or test board having up to 36 cells (5x5 pieces). Speeds range from 24 to 48/min., and the size limitations reportedly are:

1. Minimum cell size: 1¾x1¾ in.
2. Height of partitions: 2¾ to 12 in.
3. Minimum size of assembly: 6x6 in.
4. Maximum size of assembly: 24x20 in.

*Inman Manufacturing Company, Inc., Amsterdam, New York.
†E. G. Staude Manufacturing Company, St. Paul, Minnesota.
‡Huntingdon Industries, Bethayres, Pennsylvania.


0.030" CHIPBOARD - 2400 FINISH
GRAIN
A
0.030" CHIPBOARD - 2400 FINISH.
GRAIN
B
2 PIECES PER SET
3 PIECES PER SET
BLANK DETAILS
PACKING —
500 ASSEMBLED PARTITIONS FOLDED FLAT TO BE PACKED PER CORRUGATED FIBREBOARD BOX COMPLYING WITH ALL APPLICABLE REQUIREMENTS OF UNIFORM FREIGHT CLASSIFICATION AND IN SUCH A MANNER AS TO ASSURE SAFE ARRIVAL OF PARTITIONS AT USERS PLANT.
MARKING —
FOLLOWING INFORMATION SHALL APPEAR ON ONE END AND ONE SIDE OF SHIPPER IN NOT LESS THAN ½" LETTERS —
PART. NO.
NO. PER SHIPPER
NAME OF MANUFACTURER
BOARD TOLERANCE —
±5%

7 **DETAILED SPECIFICATIONS FOR SLOTTED PARTITIONS** are necessary. All dimension, type and caliper of board, direction of grain (or corrugations), board finish, etc., must be included to assure trouble-free performance. Special marking and packing instructions are helpful.

Huntingdon "24" and "36" partition assemblers are reported to handle corrugated fibreboard strips within the following dimensional ranges:

	Model "24"	Model "36"
a. Depth	1½ to 12 in.	1½ to 12½ in.
b. Maximum gate openings on No. 1 and No. 2 hoppers	26 in. (L) and ⅜ in. (H)	37 in. (L) and ⅜ in. (H)
c. Cell size: (Min.)	¾ in. square	1 in. square
(Max.)	12 in. square	12 in. square
d. Thickness of strip	0.100 to 0.350 in.	0.100 to 0.350 in.
e. Maximum feeding distance between top and bottom partition slots in index frame	22½ in.	34½ in.

Specifications

Specifications for slotted partitions should include the following:

1. Type of partitions—regular full-height, partial- or shoulder-height, extended-tip, and so on.
2. Cell size—including cushioning or extended-tip cells when used.
3. Cell arrangement—number of cells in lengthwise and crosswise directions.
4. Overall assembly dimensions or number and details of lengthwise and crosswise pieces.
5. Material specifications—kind, thickness, weight, grain or flute direction, tolerances.
6. Special features—interlocking slots, and so on.
7. Packing and marking.

One type of specification is shown in Fig. 7. (*End*)

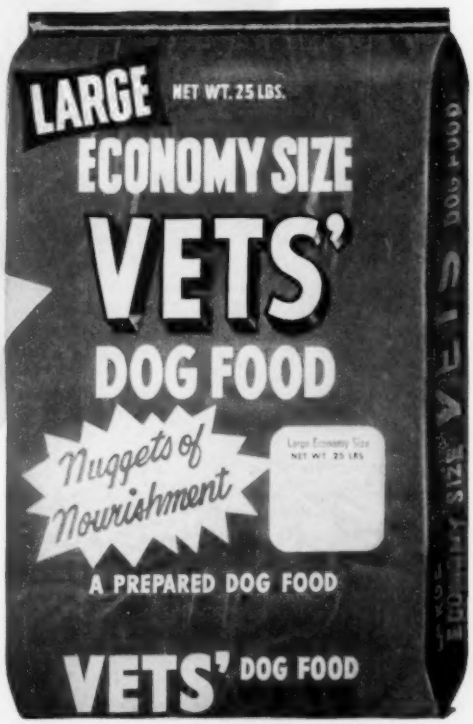
Just Between You and Your Customer

The sales success of any product depends upon the creation of a broad market of loyal customers. One of the custodians of this loyalty is your package... the protection it gives your product... its eye-appeal ...its ability to stay clean and neat.

Riegel's business is helping to build customer loyalty, by developing and manufacturing packaging materials that never let your customers down. More than 600 available... papers, foils, films and combinations... waxed, coated, plain or printed. The right Riegel material helps your sales...at a cost that helps your profits. Write to Riegel Paper Corporation, 260 Madison Ave., New York 16, N.Y.

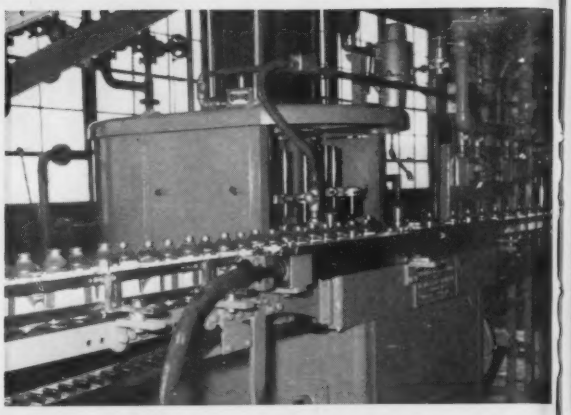
Riegel

PROTECTIVE PACKAGING MATERIALS



Vets' Dog Food goes to market in a strong colorful multi-wall bag made by Arkell & Smiths. The outer wall is brilliantly printed in three colors on Riegel's supercalendered bleached kraft.

SPOTTING PALLET LOADS OF EMPTY CANS within reach of packaging line attendant provides enough supply for normal operation. All cans come in reshipper corrugated boxes. Girl placing cans on unscrambler is one of just three people working on line. She also inspects cans for defects.



LEAVING UNSCRAMBLER, cans index into single file to go through air cleaner. From this operation, they move through volumetric filling unit, then through checkweighing. Necessity for clarity of brake fluid dictates precautions to assure clean cans and product prior to filling and closing.

Crash program packaging lines give good results

By E. P. Schneider, Jr.,
Plant Manager,
Brake Fluid Division, Wagner Electric Corporation,
Berkeley, Missouri

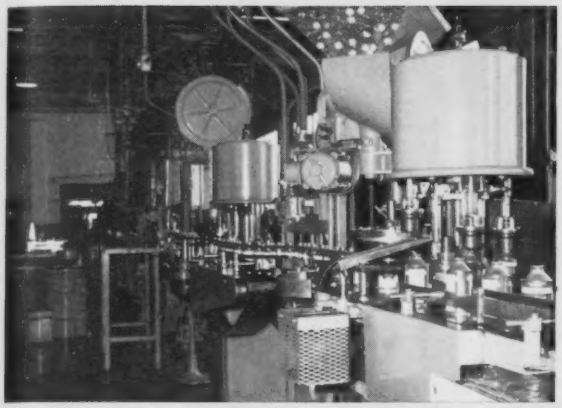
By using standard units of packaging line machinery and components, and by developing techniques to match this equipment and the requirements of our product, we were able to start up operations in our new brake fluid plant with all possible speed. Our present level of production line efficiency confirms our belief that when you must develop an operation in minimum time, you can do it without going through a time-consuming machinery development process.

The following step by-step description of our packaging operation emphasizes how effective planning and effective methods of operations can achieve desired efficiency. Furthermore, with the operations tailored to the performance of the machinery, good results can be obtained with standard, unmodified equipment. By describing our operations and our specific requirements and by reviewing the results, we can show how a "crash program" can be made practical with available machinery. **All equipment referred to in the operations described is standard, unless otherwise noted.**

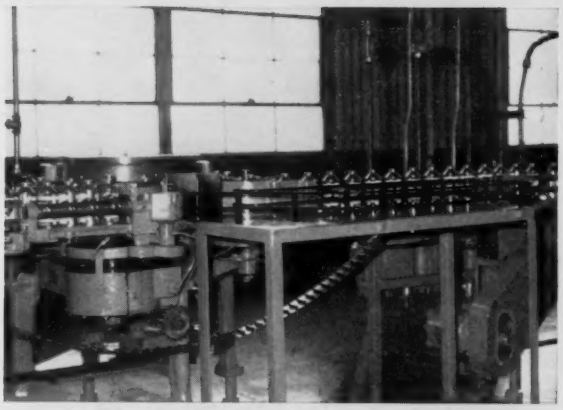
From an efficiency and changeover standpoint, we are fortunate in having only three types of brake fluid to produce and package. We have seven containers for each of these products—12-oz., 1-pt., 1-qt. and 1-gal. cans, and 5-, 30-, and 55-gal. drums. However, the nature of our fluids dictates our following certain precautions, possibly unnecessary elsewhere.

Demand Clean Cans

To meet the degree of product clarity required by The Society of Automotive Engineers' brake fluid standards and our own standards, we pay special attention to cleanliness of containers and equipment. Some of our suppliers tell us we are as particular as producers of baby food. While our product poses no special protection problems and is noncorrosive, we do keep close control over package weights. **Since we fill volumetrically, we are alert to temperature changes and variations in our storage and packaging conditions—watching for**



CLOSE ATTENTION TO PRODUCT WEIGHT prior to capping of cans is necessary because fluid can change in density during holding and transfer. Besides regular capping, cans destined for export shipment receive tamper-proof inner seals. Units of machinery are standard, put in without changes.



ACCESSIBILITY OF EQUIPMENT PLUS ADEQUATE AISLE SPACE and open area around machinery assures ease of maintenance and quick changeover from run to run. One attendant supervises entire line which operates at typical speed of 120 12-oz. cans/min. Units are each individually powered.

changes in the coefficient of expansion.

We have five canning lines: one for 12 oz.; one for 12 oz., pt. and qt.; one for pt. and gal.; one for 5's; and one for 30- and 55-gal. drums. As indicated, some lines can be set up to handle more than one size container. Since our 12-oz. can line is illustrative of our general approach to our packaging operations, a review of its features shows what we have done with unmodified, standard equipment.

Supply Empty Cans

Our can supplier delivers truckloads of palletized empty cans, and one man from our plant unloads a truck in 20 min. He spots the load in the immediate vicinity of the packaging line starting point. This provides enough supply for normal operation. We do have a reserve for emergency inventory, and there are times when we schedule delivery directly to the packaging line, without even maintaining the truckload reserve.

Our present unloading technique on pallets allows one man with a hand truck to do in one hour what two men plus a man with a lift truck formerly did in 1½ days. We get our cans in corrugated reshipper boxes, 24 cans/box. All reshippers have bottom flaps glued. We object to stapling because it might damage our cans. We specify cans positioned in boxes so that flaps of reshipper boxes are right side up even though cans are upside down.

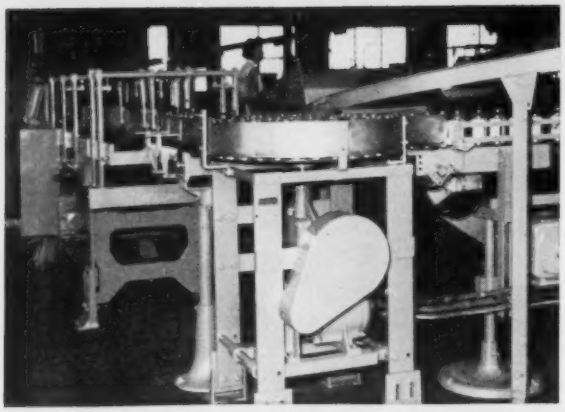
Little things, like having the cartons palletized with loose flaps up, speed up operations. They allow the girl at the unscrambling station to pick up a case with one hand rather than have to twist her body to reach with two hands. The purpose of having cans upside down in cartons is so that cans will be right side up when dumped out on the Horix unscrambler.

Use Only Three People

Only three people are needed on the packaging line: (1) the girl putting on empty cans at the unscrambler, (2) a general attendant

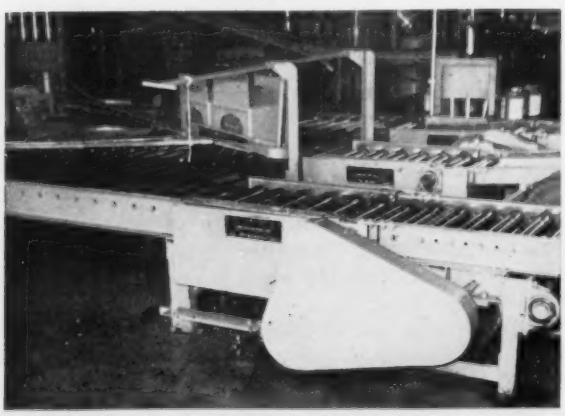
E. P. Schneider, Jr. is a graduate of the Missouri School of Mines and Metallurgy with a B.S. degree in chemical engineering, and of St. Louis University, with an LL.B. degree. Prior to his joining Wagner Electric Corporation, his work included extensive experience in the chemical industry. His work at Wagner includes participation in the design as well as in the operation of its new plant for the production and packaging of hydraulic brake fluid. Mr. Schneider is a registered professional engineer and a member of American Chemical Society, Alpha Chi Sigma (chemical) and Phi Alpha Delta (law).

In contrast to today's prevalent practice of ordering special machinery and installing tailor-made equipment to fit particular operations, here is an example of what happens when you build a series of packaging lines (in a new plant) using standard equipment with practically no modifications. Mr. Schneider explains that his company wanted to get its new brake fluid plant running as quickly as possible and did a minimum of machinery exploration. His review of the special features of his plant's packaging lines shows that you can set up a plant quickly, equip it with standard units and still attain a high level of operation efficiency.



PACKAGING LINE MAKES 90° TURN at rotating unscrambling table which provides backlog in case of jam at semiautomatic case packer. Note empty reshippers moving by conveyor (right to left) to meet cans at case packer.

PACKAGING LINE ATTENDANT TAKES OVER AT CASE PACKER to examine work of machine. Normally one girl works at this station. Cases leaving packer move on conveyor system to go through either of two case sealers.



THIS JUNCTION POINT PERMITS SWITCHING OF PRODUCTION from three packaging lines to either of two case sealers. Push-button control permits fast automatic change to preset dimensions for any of four case sizes.

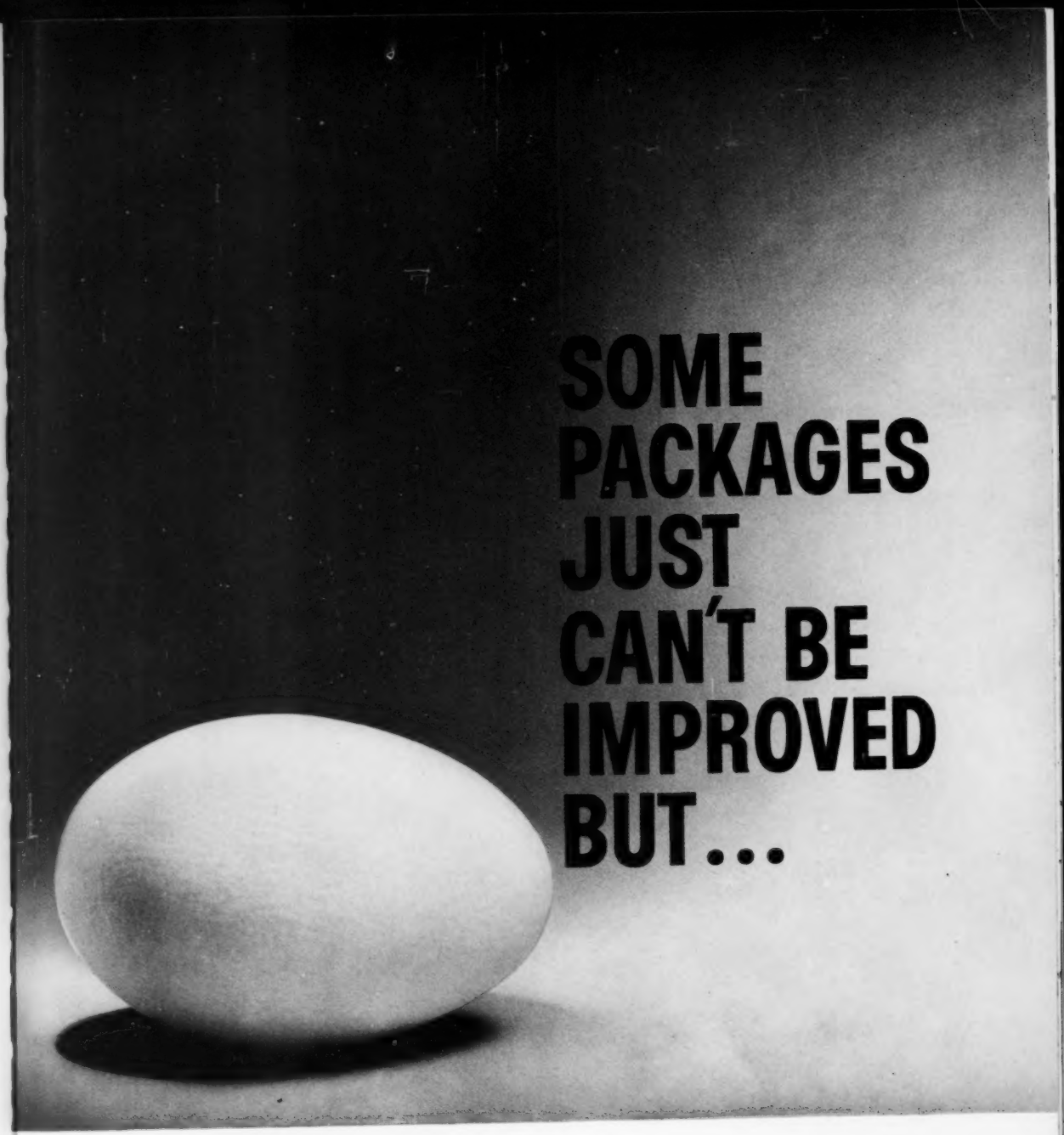
and inspector, and (3) a girl operator for the case packer. The girl putting empties on the line also does some inspecting, looking for such things as upside down lithographing, dented or scratched cans, and so on. The general attendant also inspects the cans as they move forward down the line. In addition, he watches machine functioning, overseeing all the equipment on the line; clearing any jams, making sure that cans are filled to proper level, that caps are being screwed on with adequate torque and making any minor equipment adjustments necessary.

The unscrambler indexes them into single file for entry into a U. S. Bottlers air cleaner. **Because of our desire for fluid clarity, we take this step as an added precaution. In addition, our specifications provide for quality control inspection of empty cans, both at our supplier's plant and in our own.** Incidentally, we specify a particular solder flux and crimping fluid. A normal solder flux uses a muriatic acid which we do not tolerate on our cans because of possible corrosion resulting. Also we do not want to use any other normal synthetic rubber crimping compounds which might contain chlorides. We are extremely particular about this.

Check Product Weight

Once cans go through the air cleaning operation, they index into the filling machine which is an automatic volumetric unit with 16 heads, made by U. S. Bottlers. From here, cans move through a Food Machinery checkweigher which automatically ejects underweight cans to an adjoining table. Our line attendant uses an Exact Weight over-and-under scale for spot weighing of individual cans. This is mainly to catch overweight cans. Further spot weight checks are made in our laboratory completely independent of our production department.

Reason for close attention to weight is that in course of handling and transfer from our storage to holding tanks to filler supply receptacles our product changes in



...others can, and improving them is our specialty. Plax concentrates on packaging in plastics. We make containers and wraps for scores of products—including food of all kinds. Clear, flexible Plax film and sheet of many thicknesses can offer your product startling advantages in appearance and utility. Some examples of dramatic packaging at remarkably low cost are shown on the pages following.

PLAX®

PLAX
GIVES A PACKAGE
A PLUS

INCREASE SHELF LIFE AND PROFITS

Now, increasing numbers of food packagers are displaying their wares in sparkling, transparent containers formed from Polyflex—the FDA approved* polystyrene extruded by Plax. Formed into low-cost disposable lids, domes, trays and containers, Polyflex increases impulse buying of a variety of fresh and frozen foods . . . including baked goods, meats, poultry, dairy products and many others. Polyflex is non-toxic, odorless, tasteless. It is waterproof, greaseproof and resistant to high and low temperatures. It will increase shelf life for many food products. Polyflex gives you more packages per pound.

*Unpigmented polystyrene—FDA approved 11-15-56. Quarterly Bulletin of Assoc. of Food and Drug Officials, Dr. A. J. Lehman

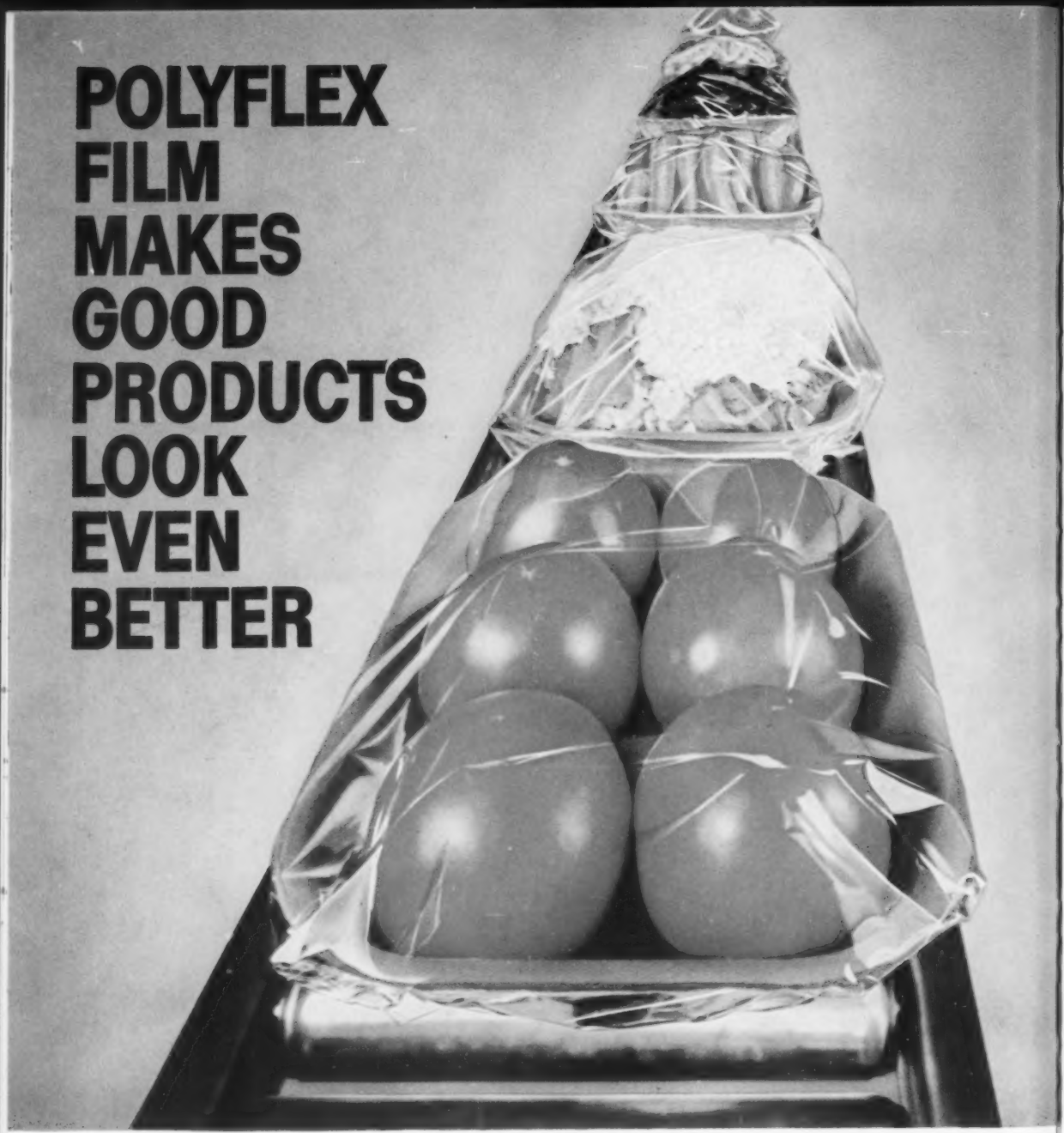
WITH NEW CRYSTAL CLEAR POLYFLEX.

The large staff of Plax designers and engineers, working with your specialists and fabricators, can help you develop unique package styling that will move your product faster. The foremost maker of plastic bottles, Plax now brings you Polyflex . . . a clear invitation to buy.

PLAX

PLAX GIVES A PACKAGE A PLUS

POLYFLEX FILM MAKES GOOD PRODUCTS LOOK EVEN BETTER



Crisp, high-clarity Polyflex film is one of the most attractive and economical overwrap materials for fresh foods in use today. FDA approved for direct contact with food. You can save up to 40% on your overwrap or carton window costs by switching to Polyflex. This superior film is machinable on conventional, high-speed packaging equipment, and heat-sealable for in-store or automatic packaging.

Plax Corporation, Hartford 1, Conn.

In Canada, Plax Canada Ltd., Toronto

PLAX

PLAX GIVES A PACKAGE A PLUS

density. This is caused by some tanks being indoors and some outdoors. Also, the outdoor tanks are subject to changes in temperature. This is especially a problem in extremely hot or cold weather. Overfill results in loss of fluid as well as possibly violating the ICC headspace regulations. The reason for not wanting to underfill is obvious. To be on the safe side, we always slightly overfill.

Cans destined for export shipment receive a tamper-proof innerseal, while cans for domestic use bypass the innerseal application unit. Whether given tamper-proof protection or not, the cans next move into a Consolidated capper which functions automatically.

Feeding The Caser

Leaving the capper, our cans move to a rotating unscrambling table which serves as a backlog in case of a jam at the Standard-Knapp semi-automatic case packer. This allows time to correct any delays at the packer without having to shut down the canning line.

The empty reshipper corrugated boxes, having been put on a power conveyor by the girl at the front of the line, arrive alongside the packer where they are filled, and the loaded cases move on a conveyor system to our automatic case sealing equipment.

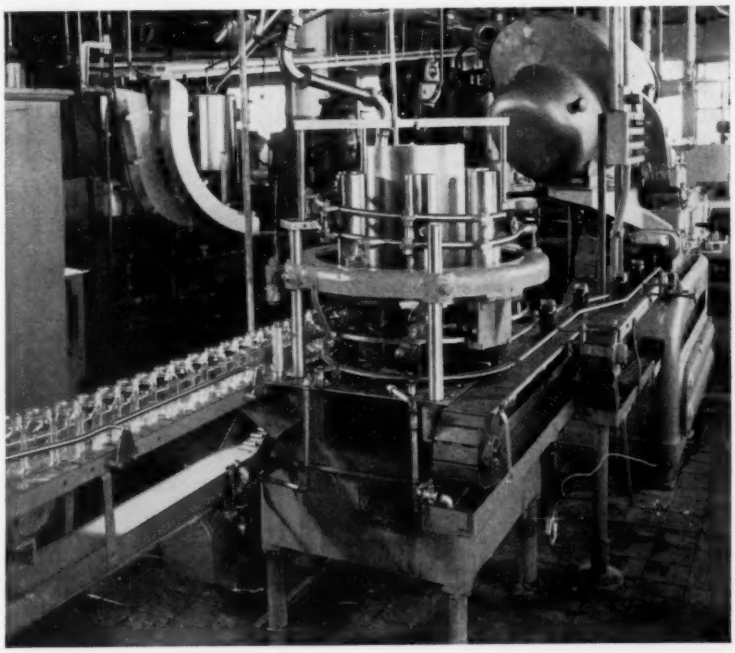
Sealing Of Cases

At our case sealing operation, conveyors from three packing lines converge to go through two Standard-Knapp case sealers. By push-button control these units automatically adjust to pre-set dimensions for each of our four sizes of cases. The push-button control is operated by one of our general line attendants. Since only three different size cases can be filling at any one time, he allows two of these to go through the packer with a dropout section holding back the production from the third line.

When approximately five minutes accumulation of shipping cases has backed up on the third conveyor, he then pushes a button which drops a section of conveyor,

FLUIDICS

is a new PFAUDLER PERMUTIT program that provides a modern, imaginative approach for handling and processing more profitably the liquids and gases involved in: blending, evaporation, distillation, drying, filling, heat transfer, storing, centrifuging, agitation, water and waste treatment, corrosioneering, and metering.



FLUIDICS AT WORK

How to fill even viscous hot fudge with speed and accuracy

If you have problems filling viscous products accurately without losing speed, consider the experience of the Robert A. Johnston Company with their six-station Pfaudler rotary piston filler.

Mr. A. O. Meyer, Plant Manager, says, "The Pfaudler filler has been giving us some very good results. We fill approximately 55 six- or eight-ounce jars per minute with heavy hot fudge without a spill. And we also package caramel, butterscotch and chocolate syrup.

"The filler takes only about a half hour to clean thoroughly. We've had very little maintenance with it. In fact, all it really needs is a routine cleaning and lubrication."

The RP-6 filler is the smallest in the Pfaudler line . . . an ideal model for filling small lots of a number of products. Change-over for various container heights takes only about 12 minutes. Other models of the rotary piston filler will handle up to 1050 cans a minute. All these fillers are rated to ±0.1 fluid ounce accuracy.

If you'd like the full story on the complete line, write to our Pfaudler Division, Dept. PE-10, Rochester 3, N. Y.

PFAUDLER PERMUTIT INC.

Specialists in FLUIDICS . . . the science of fluid processes

NEW!
A COMPACT, ACCURATE SERVO INDICATING TEMPERATURE CONTROL WITH CIRCULAR READOUT!

New circular readout controller designed specifically for use with packaging and plastics machinery. Note the improved indicator visibility.

Always a true indication of temperature. Readout and control never limited by mechanical stops or machinery vibration.

Positive readout with guaranteed independent control—meter movement completely separate!

Circular readout available on proportioning and on-off units. All units are designed to fit standard mounting dimensions.

The first compact servo indicating temperature control with circular readout offering high accuracy at low cost.

For additional information on complete range of controls, costs, etc., write or phone:

EP
ELECTRONIC PROCESSES CORPORATION OF CALIFORNIA
436 Bryant Street, San Francisco 7, California

For more information circle No. 224 on Reader Service Card, Page 71

SENECA WIRE

BOX STITCHING
BOOKBINDING
AND TAG WIRE

QUALITY
UNIFORMITY
DEPENDABILITY

SENECA WIRE
AND MFG. CO.
FOSTORIA, OHIO

holding back one of the other two lines, and lets the third one start moving forward through the case sealer. A set of timers automatically starts working at the pushing of the button controlling a certain lapse of time to allow (a) previous size cases to completely pass through the case sealer and compression unit, (b) change dimension on the case sealer, and (c) raise the drop-out section on the conveyor that had been holding back cases.

Since, after the sealing operations, the conveyors fan back into three lines carrying cases to our storage warehouse, the timing device also must control a lever to determine into which of the three conveyors they will flow. We have worked this out on a timing basis. For example, some operations require a 5-sec. interval, others 10-sec., and so on; but once we set our correct timing interval, it functions automatically and requires little attention.

When we are running all three packaging lines through our two case sealers, the cases run continuously through the 14-ft. compression unit, and therefore we require a fast-setting polyvinyl acetate glue. If only two lines are running, we use an inexpensive dextrine-type glue. A slower set makes no difference since the dwell time in the compression unit is 40 sec. rather than the 15 sec. for running continuously. With two lines running, as one shipping case enters the compression unit, the belt moves forward and one exits from the other end.

While the case is going through the gluer compression unit, it is code-marked; and as it exits, a counter records our daily production. For export shipments, another case marker roll stamps the required data on the top.

Speed And Power

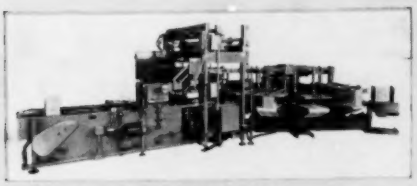
Typical of our operating speeds, our 12-oz. can line runs at 120 cans/min. We have equipped it with the usual features such as a no-can, no-function attachment for the tamper-proof inner sealer and capper. If we did not have this,

For more information circle No. 225 on Reader Service Card, Page 71
Circle No. 226 on Card, Page 71

What?

Feed all these different sized cases, in random order, into one automatic case sealing installation?

Yes! It's being done. The Omnimatic-Rotopress automatically seals and discharges corrugated shipping containers of widely varying dimensions, fed to it in random order, at speeds up to 20 cases per minute. A choice of pre-set discharge patterns permits the simultaneous use of as many as five different Rotopress discharge stations, with sealed cases of different heights automatically discharged to separate take-away conveyors. Employing a unique circular compression unit, the entire installation occupies only 144.9 square feet, and permits random feeding of cases that may vary in length from 8" to 30" in width from 6" to 22" and in height from 6" to 18".



Packomatic Omnimatic-Rotopress operating at the General Electric Company's Trumbull Lamp Plant at Warren, Ohio.

WRITE for 8 page technical brochure giving complete design, application and dimension data. Request Packomatic Brochure 100-60.

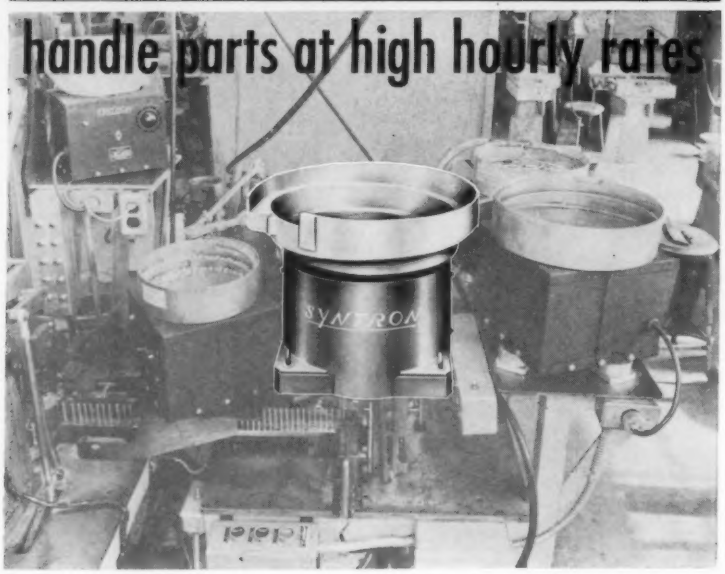
Packomatic®

T.M. Reg. U. S. Pat. Off.

J. L. Ferguson Company
Box 1226 (Phone 6-6275)
Joliet 1, Illinois

SYNTRON cost-reducing equipment of proven dependability

handle parts at high hourly rates



SYNTRON

VERTICAL-VIBRATORY

PARTS FEEDERS

. . . replace manual methods of handling small parts . . . handle parts of almost every size, shape and material at high instantly controlled rates to packaging, marking and other operations.

SYNTRON Parts Feeders offer dependable, high count, single file feeding of parts. Designed for efficient, dependable service with little or no maintenance.

Write for free literature on SYNTRON Parts Feeders

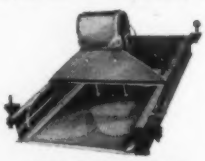
SYNTRON SINCE 1921

SYNTRON COMPANY

269 Lexington Avenue Homer City, Pa.

Other SYNTRON Equipment of proven dependable Quality

VIBRATORY PACKER & JOLTERS



VIBRATING SCREENS

BIN VIBRATORS

seals and caps would go flying onto the floor if no can was in place at the time the machine started. Small Micro Switches control this. We also have no-can, no-fill attachments, and other such controls operated by Micro Switches.

The individual unit operations on our packaging line are individually powered rather than under a common drive and are coupled with short lengths of conveyors. Since they are individually powered, each has a variable speed drive which must be closely synchronized with the unit behind it. This not only prevents jamming but also keeps the cans from bumping too hard, causing a splashing out of product.

We have provided a series of "back-up" switches on each line so that, from the palletizing point all the way back to the start of the line, various operating units will automatically stop should there be a stoppage anywhere on any part of the conveyor, or should the stock handler fail to unload the conveyor at the end of the line. Having enough of these switches assures us that the equipment can stop quickly, thus averting jams which would damage either equipment or brake fluid cases. It is also possible with one set of switches to stop the entire line.

Use Of Space

We have provided adequate space between lines so that all equipment is readily accessible for maintenance and also to facilitate good housekeeping. Each of our lines is laid out in a straight-line fashion up to the case packer where it makes a 90° turn and then another 90° turn to go into the case sealer. Production leaving our case sealer moves via overhead conveyors into an adjoining warehouse. This U-shaped arrangement allows the beginning and the end of the canning operation to be next to the warehouse in which empty and filled cans are stored.

The plant area generally has been designed with extra space so that more canning lines could be added if necessary. (*End*)

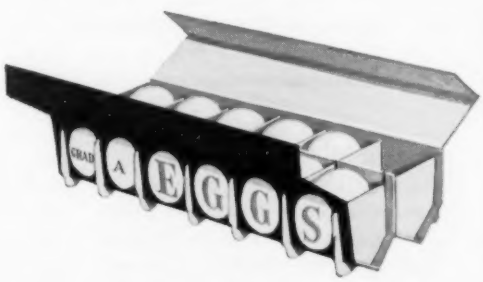
Planned Packaging moves merchandise

Ever play catch with an egg?

If you have, you'll appreciate the terrific protection job cartons perform. And they're marvels of packaging ingenuity, too!

Thousands of delicate articles . . . like electronic instruments, radio tubes, laboratory glass, precision machined parts . . . require kid-glove handling from manufacturer to user. Specially designed cartons that simplify insertion and closing enable faster filling line methods, save time and costs and provide maximum protection in transit.

Creative, cost-saving carton design is but one of countless ways in which Packaging Corporation of America's concept of Planned Packaging, implemented through integrated national facilities, produces better packaging . . . more sales. Whether your requirements are large or small, regional or national, we welcome the opportunity to help you.



Packaging Corporation of America

Administrative Offices: Grand Rapids, Michigan; Quincy, Illinois; Rittman, Ohio

Cartons • Containers • Displays • Egg Packaging Products • Molded Pulp Products • Paperboards

For more information circle No. 228 on Reader Service Card, Page 71

Fast, simple methods measure label scuff

By Irwin R. Sipherd, *Supervisor of Chemical Control, National Distillers Products Company, Division of National Distillers and Chemical Corporation, New York*

In contrast to so many areas of package testing where no shortcuts exist, there are practical ways of evaluating the rub-resistance of labels on glass bottles. Mr. Sipherd points out that 20 minutes in a modified Sutherland ink-rub tester is the equivalent of a transcontinental trip by rail or motor freight. His experience in label testing shows that users can win the cooperation of lithographers and label printers by convincing them of the quantitative need for improved scuff resistance. This in turn leads to the use of improved coatings and eliminates the need of protective bars on bottles (to shield labels from abrasion) or higher moisture content in labels themselves.

When we first began an earnest study of the problem of scuffing of paper labels on glass bottles, the method used to determine the degree of scuffing was to strap a case of whiskey onto a shaking machine and to run it for awhile. The shaking would definitely demonstrate whether or not our labels were scuff resistant, but the method was laborious and slow.

The cause of scuffing of labels on glass containers is the rubbing of the labeled convex surface against a coarse kraft paper liner of a shipping case or the partitions therein. Constant vibration of the bottle against the rough surface can disfigure the labels very severely. In order to retain the original appearance of the labels, however, they must also be protected against dampness, light, and other deteriorating factors such as dust and dirt.

Label: A Compromise

Before describing the methods we used to evaluate the problem and then to solve it, let me stress that **a commercially practical label almost always represents a compromise.**

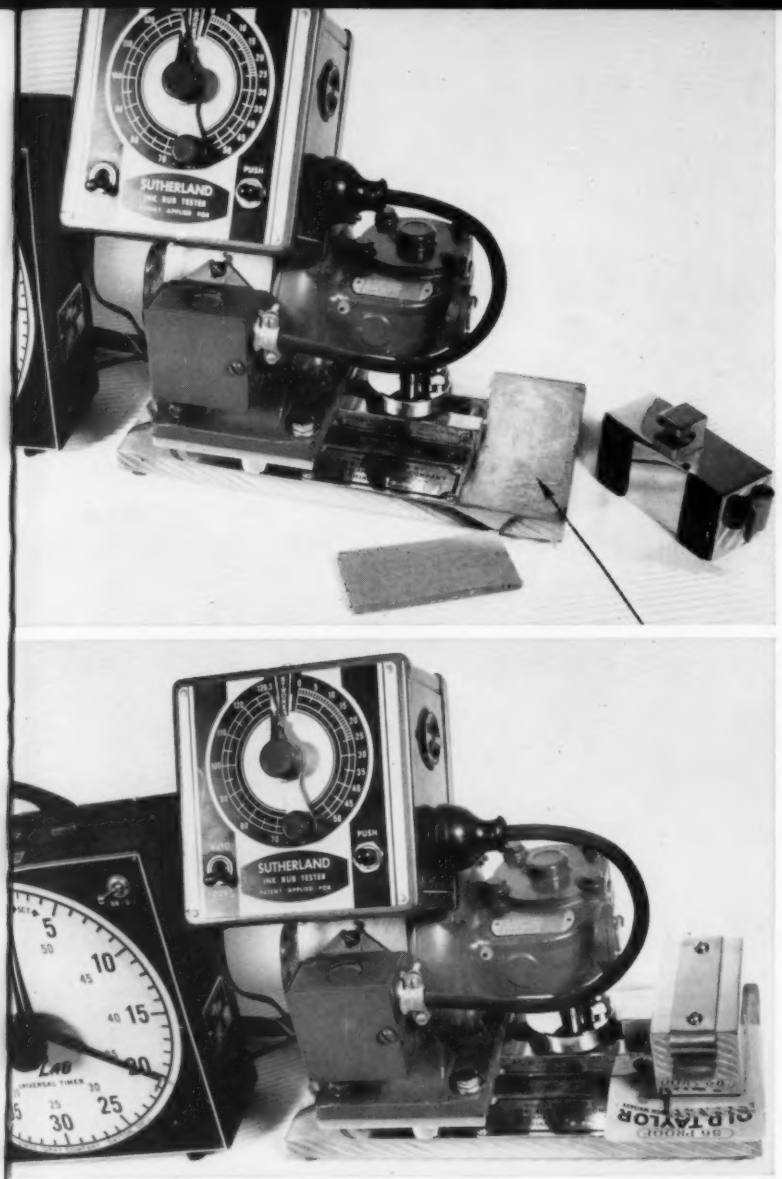
If one attribute or set of values were the goal, there would probably be no problem at all. If the matter of scuff resistance were the only thing to be considered, the solution would be comparatively simple. But, as a practical matter, several other properties are also involved in the preparation of a label – and these properties cannot be ignored.

The sales department looks to the artist's design to help stimulate in the buyer a desire to have the product. Purchasing is concerned with the economy of the label. Management has imposed a cost limit. And production is also actively concerned in the selection, for size, shape, weight, and texture; surface of the paper, as well as other properties, can often turn out to be very impractical. From a production standpoint they always merit primary consideration when a label is designed.

Basic Difficulties

Labels that were very satisfactory many years ago when hand labeling was the only method of attaching them to glass bottles, were traditionally soft and pliable. They had a surface that could not resist even gentle rubbing without marking or scuffing. They had a certain charm, but they were very impractical and very costly to apply.

Another factor in today's operations that contributes to packaging problems is the practice of making up labels in large quantities in anticipation of long-term use. Space may be left blank for additional printing when needed, but in order to permit over-printing, the surface must be left unfinished – or a portion of the space left unfinished. The unfinished portion of the label is very much subject to scuffing and smudging.



FOR LABEL SCUFF-RESISTANCE TESTING, Sutherland ink-rub tester is modified by adding glass plate (arrow), 4-lb. weight, and kraft paper liner (top photo). Label of 60-lb. litho stock is taped to glass plate (lower photo) for testing. Note kraft liner between label and weight.

Choice Of Technique

Knowing that the cause of scuffing is rubbing, the next step was to measure the amount of rubbing and the amount of the resistance a label would offer to a measured amount of rubbing. Three types of machines were available for evaluating scuff resistance. They involved the use of:

1. **Abrasion** by a ceramic wheel.
2. **Shaking** a completed package within a carton.
3. **Rubbing** of a fixed surface.

The rubbing of a fixed surface appeared to be the most satisfactory for our use because it duplicated the actual situation and assured consistent results. Through Packaging Institute we learned of a machine of this type—the Sutherland ink rub tester. Power driven, this machine moves a 2- or 4-lb. weight in a horizontal reciprocating arc of small amplitude over a fixed surface. Being power driven, the stroke frequency is constant.

PI Test Modified

The Sutherland machine is the subject of a Packaging Institute test procedure (from PI's printing committee), designated as PI Printing 4T-54. **It was necessary to modify the machine somewhat to meet our requirements.** The rubber base furnished with the machine was removed and replaced with a double-weight glass panel. The ends of the glass were extended a fraction of an inch beyond the maximum swing of the weighted scuffer.

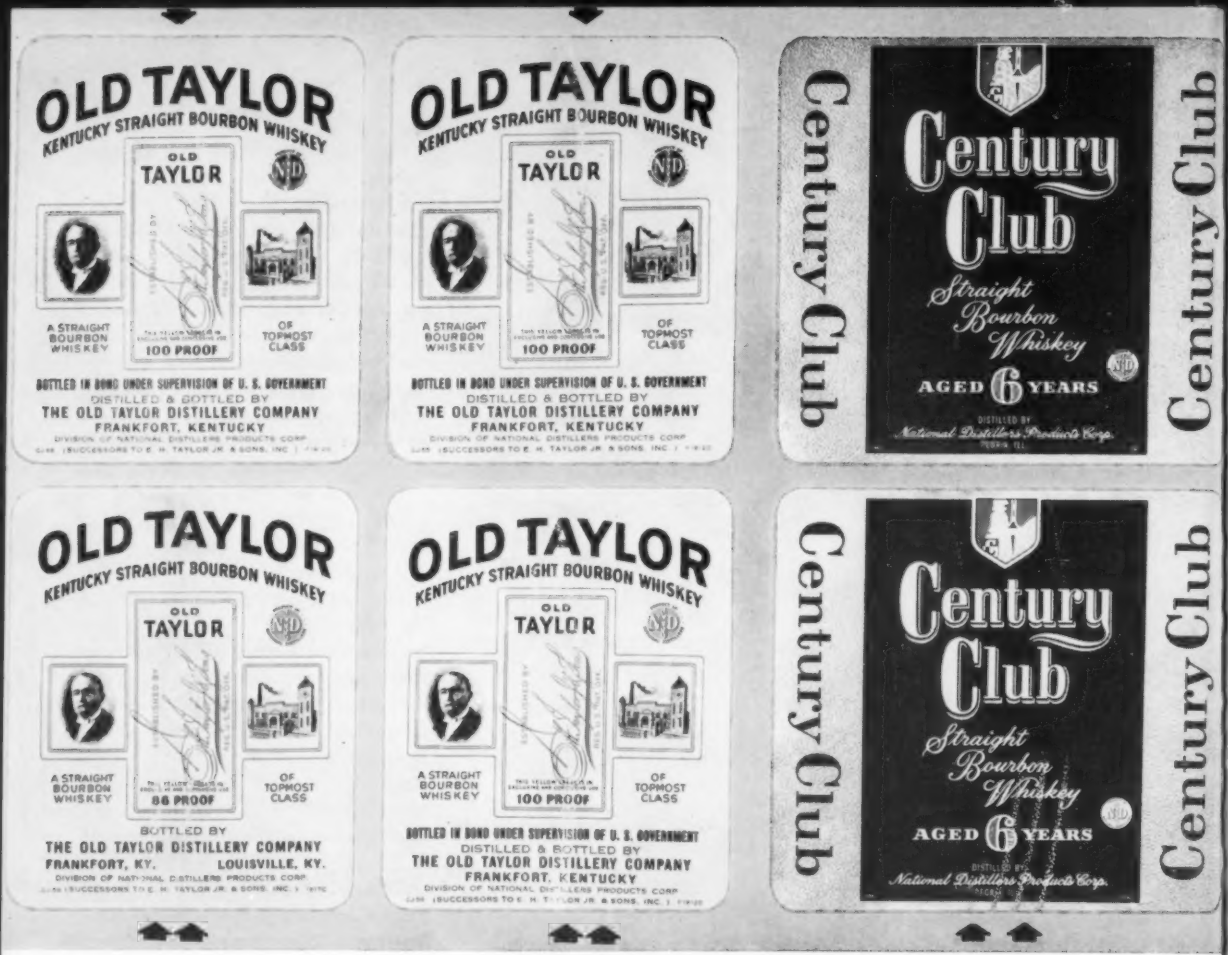
The weighted scuffer selected is a 4-lb. rectangular weight with a base 2x4 in. Beneath the weight we placed an unused strip of kraft paper liner cut the same size as the base (2x4 in.). **The liner must be inspected before use to be sure that there is no visible blemish on its surface that could cut the surface of the label.** The edges of the liner are smoothed so that no cutting edge touches the label to be tested. The type of kraft liner used is the same as that normally used for case partitions and liners.

The label is attached firmly to the glass plate with pressure-sensitive tape. The tape is so placed that the swing of the weight with the kraft liner does not touch the tape when the machine is in operation. The tape could cut the liner causing a sharp edge on the liner, which in turn, could cut the label and cause an error in the results.

Keep Solvent Out

If the label is too small to be held securely with tape, it is possible to stick the label to the glass with a rubber cement. The cement is applied to the glass and most of the solvent is allowed to evaporate before the label is pressed into the cement. This is an important precaution because, **if the solvent is absorbed into the label, the solvent will soften the finish on the surface** and cause a false indication of low scuff resistance.

This method of testing duplicates the actual situation. The label is attached to glass, rubbed with a kraft liner on which the corrugations extend the length of the liner,



IN PRELIMINARY STUDY OF VARIATIONS IN SCUFF RESISTANCE, label at upper left received 200 strokes; other Old Taylor labels, 300 strokes each. Evidence of scuffing shows in middle (arrows) of labels. Of Century Club labels, lower one was subjected to 20-minute rubbing—equivalent to cross-country trip—with abrasion resulting (arrows). Upper label shows no abrasion (same rubbing); coating protected its surface.

the liner being held in place by a 4-lb. weight. Only one variable remains. That variable is the degree of scuff resistance of the face of the label.

Evolve New Spec's

After many trials and modifications of the machine, we were able to establish a set of specifications which proved to be satisfactory. Once the specifications for testing were established, we were then ready to determine our limits. **Our aim was to be able to ship a case of whiskey across the continent by rail or truck and have the labels in good condition upon arrival at destination.**

We selected several different labels having specific scuff resistance (as demonstrated by the Sutherland tester) and applied them to bottles containing water. The cases of bottles were then shipped halfway across the continent and returned unopened to us in New York.

We soon found which labels could withstand the trip across the continent. By checking the test results in this manner, we were able to establish standards. We found that 20 min. of rubbing in the machine in the manner described was equivalent to the rubbing of labels affixed to standard straight-sided bottles that are transported by rail or truck across the continent.

Set Up Lab Method

A procedure for testing uncut labels was established in the New York laboratory. The purchasing department cooperated in the program by establishing a procedure by which the supplier furnished us with sheets of uncut labels for ap-

Irwin R. Sipherd has a bachelor's degree in chemistry from Simpson College and a master's degree in biophysical chemistry from Iowa State University. He has been with National Distillers ever since completing his education. He is a member of American Chemical Society, American Society for Quality Control, American Society of Brewing Chemists, American Society of Cereal Chemists, and American Society of Enologists. Also Mr. Sipherd represents his company in Society of American Bacteriologists and the Packaging Institute.

ONE WAY OF PROTECTING LABEL—allowing relaxation of scuff resistance specifications—is to build up bottle around label area to hold carton liner away from label. Examples include (left to right): indented label panel; protective bars and raised figures; built-out shoulder and base.

proval. We were surprised at the variations of scuff resistance within different lots of the same labels from a single supplier.

After several rejections, the suppliers began to give greater attention to the protective coating of the label. In order to meet the specifications, more protective varnish or coating was applied. Because of the additional varnish used to meet specifications on scuff resistance, some labels became so stiff that labeling difficulties began to arise.

Check Label Moisture

In the process of applying varnish to labels, heat is required, which in turn, dries out the labels. To replace the moisture and to correct the dryness of the label, we then made many tests on the humidification of the labels. At one of the plants a room was equippeed with shelves where labels could be exposed to any controlled temperature and humidity desired. Thousands of labels were carefully humidified and the moisture content increased to different levels.

As a result of the increased humidity, some labels worked well in the high speed labeling machines, while others would stick together, i.e., block, in the form of a brick. No one particular level of moisture content was found to be satisfactory for all labels.

Design Bottle To Protect Label?

Thus, by increasing the scuff resistance of labels, new problems were created. It was felt that the specifications of scuff resistance could be relaxed if other types of protection could be provided to compensate for the relaxation of specifications.

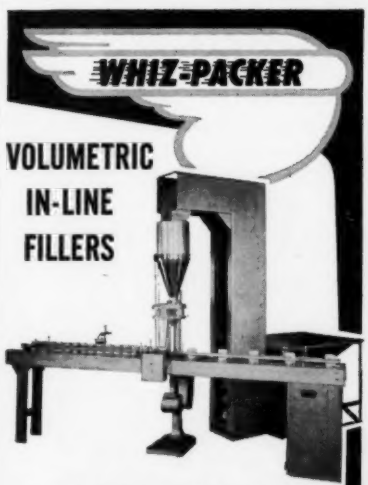
One method of protecting the label was the use of bottles with protective bars, medallions, or decorative rings molded into the glass which serve to hold the carton liner away from the label. This method of protection relieved the situation for several types of labels.

Get Better Coatings

While we were struggling with these problems, the lithographers and printers developed a coating that was far superior to any material ever previously tried. The scuff resistance of labels treated with this coating could be measured by *hours* on the machine instead of *minutes*.

We learned that the coating was applied at room temperature so that there was no loss of moisture from the label paper. The application of these labels by the machine was made easier, and the necessity of protective bars on the bottles or increased moisture in the labels was eliminated.

The attractiveness of the label was in no way decreased by the use of the new protective coating. On the contrary, it was enhanced. Furthermore, the coating did not seal off the pores of the label which could cause the entrapment of air behind the label. The label could be embossed easily. (*End*)



A peak efficient combination of a synchronized volumetric filler and conveyor for filling rigid containers with all types of dry products. Speeds up to 80 per minute. Variable speed drive. Conveyor can be designed to suit existing or future plant equipment. Complete specifications and literature on request.

FRAZIER & SON
20-01 INDUSTRIAL WEST, ALLWOOD
CLIFTON, NEW JERSEY
Designers and manufacturers of • Volumetric and Net Weighing Machines • Parts Handling Equipment • Rotary Filling Machines • Conveying & Elevating Equipment

Keeping jar tops free of product particles

By providing a three-step, in-line operation, dovetailed into its glass packing line, Lakeside Packing Company, Manitowoc, Wisconsin, now gets intact sealing with its top-seal, twist-off covers. The inherent springiness of a blanched, whole bean and the necessity of having the top edge of each jar completely free of product prior to closing, led to development of the present method.

Three-point solution of the problem includes (1) a set of spring-loaded, press-down type 35 cc. head spacer cones, (2) a gear-driven belt packer, and (3) a washing unit. These three work together to assure level jar surfaces free of product particles. They assure adequate head space within jars before they enter the standard closing machinery.

Filling Whole Beans

Although experienced in production line volume packaging of a variety of vegetables, including cut beans, the packaging of whole beans in standard 303 vegetable jars with twist-off caps represents a "first" for Lakeside. It has not yet mechanized this operation, but provides a battery of packing tables for the manual filling of individual jars.

Experience and dexterity guide the workers who put beans into jars. As the beans are already blanched, they withstand considerable twisting without snapping. But the beans sometimes spring up in the course of filling. It takes a certain knack to get the right amount of beans into a jar without over filling. Any attempts to jam in an excessive quantity result in a crinkling of the beans.

Packaging line crews move filled jars to the main glass packing line where a chain conveyor carries them through a brining station. After each jar gets a predetermined measure of brine from the brining pipe, the jars are ready for sealing, but first must pass through the three-stage operation preparatory to obtaining proper closing of the jars.

Prepare Jars For Sealing

Lakeside executives say the basic problem of this operation was to get the beans or bean particles off the top of each jar after brining and before closing. Although each jar requires a given head space, this is not enough, and additional compression and washing proved necessary.

The in-line head spacer has a set of three spring-loaded, press-down type 35 cc. head spacer cones. The downward movement of one of these cones into each jar provides the correct head space necessary to allow a proper vacuum in the course of jar sealing. The exterior portion of each cone is Teflon. The tip of the cone is somewhat like a circular cookie cutter and provides a shearing action. **As a result of this spring-loaded shearing, any product hanging over the**

WORKERS MANUALLY FILLING STANDARD 303 VEGETABLE JARS with whole beans develop knack of getting right number into each jar without over filling. Jamming in excessive beans results in crinkling. Beans are already blanched, and withstand much twisting without snapping.

Upon starting to pack whole green beans in glass jars using top-seal twist-off covers, Lakeside Packing Company had to devise ways of making sure no beans or bean fragments protruded above or caught on top surfaces of jars. It now uses (1) a spring-loaded head spacer cone, (2) a pressure belt, and (3) an exterior washing action – all working together to provide an intact surface for jar sealing. Lakeside specialists also found a way to avoid scuffing and scratching of jar cover enamel: Put sheets of rubber belting between layers of jars in retort baskets prior to subjecting them to the agitation inherent in retorting.

side of a jar is cut free and released.

This is due to the retracting action of the particular style of plunger on the head spacer. Once the plastic head spacing cone goes into place, the retractable nipper in the center or tip of this cone moves downward to nip off any protruding beans. It then retracts upward prior to the upward movement of the plastic cone itself—up and out of the jar thus tamped down.

Belt Wiping Action

Leaving the head spacing unit, the filled and tamped jars move into a belt packer. This is a continuously moving compression belt which wipes off any protruding beans and creates a level surface on the top of the open jar. It is gear driven and fits into the available space between the head spacing unit and the closing machinery. Also it provides a precision timing action and uses a worm drive spacer to space out jars for correct movement into the next operation. Thus jars leave this unit in even sequence and move into the closing machinery.

In this connection, the head spacing unit itself has a reciprocating action. Thus, the head moves down on a jar, rests in place momentarily, and moves laterally with the jar on the belt. Next it retracts thus permitting the head spaced jars, properly tamped, to move into the belt packer in an even sequence of spacing.

Washing Completes The Job

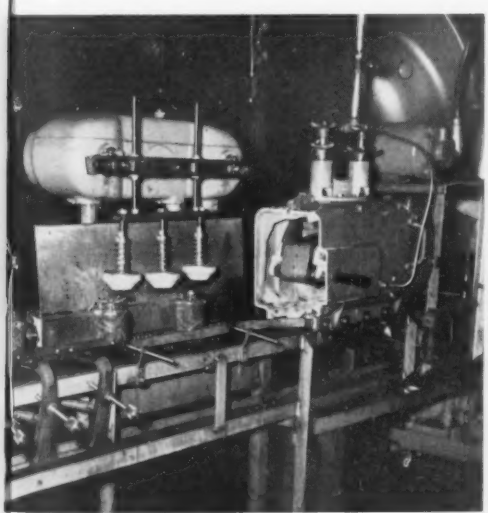
Now, the compression belt packer wipes off any fragments remaining after the head spacing or tamping action. This unit is also equipped with a water jet action to wash off any beans from the outside surface of each jar. It does this without injecting any water into the jar—an important precaution to avoid diluting the brine solution already there. Thus, after the belt wipes off the fragments, the water spray washes down the outside surface.

An intact surface (especially along the top rim of the jar) is necessary in order to assure a correct seal. If a product particle is caught between the jar surface and the seal, the result will be a vulnerable and imperfect closure.

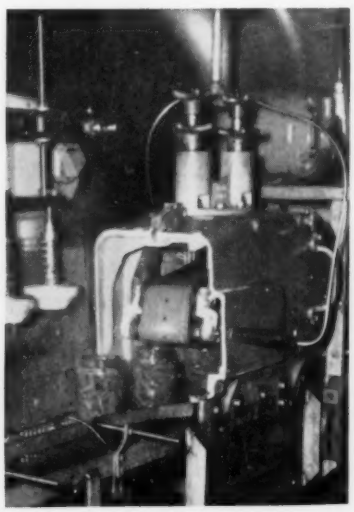
All three of these units (head spacer, belt packer, and water jet action) had to be fitted into available space between the brining pipe and the closing machine. While this equipment is a standard White Cap unit, Lakeside's packaging crews had to learn the special techniques necessary with whole beans in glass jars.

Use Right Techniques

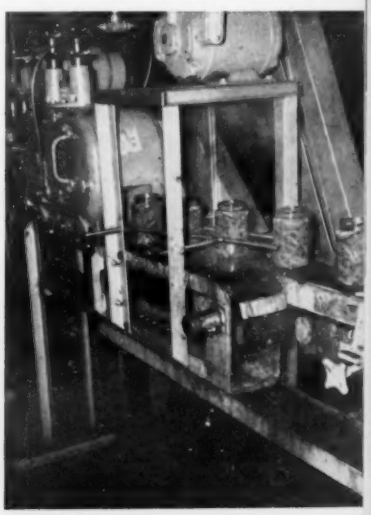
For example, since there is a twist-off closure, it cannot have as much pressure as other types. The sealing compound inside each cover has to stand anticipated heat



THREE IN-LINE HEAD SPACER CONES tamp down beans providing space for vacuum. Tip of cone works like cookie cutter, cuts free any fragments hanging over jar sides.



AFTER HEAD SPACING, JARS move (left to right) to belt packer. Moving belt wipes off any fragments, levels surface of open jar.



JARS ARE WASHED to clean exterior surfaces, after which jars move to the right for the vacuum closing operation.

and must be formulated accordingly. Similarly, the machine action must avoid cutting through the seal. At the same time, the compound must be fairly soft in order to seal to the top of the jar. It is important that the compound does not expel through a component or, in effect, cut the sealing compound.

Part of the knack of running this line is learning to use the varying caps and compounds that different packages required. These jars go into the closing machine which pulls a vacuum of 10 to 15 in. for each jar. Correct top pressure ranges from 16 to 25 lb./sq. in.—more probably 20 to 25 lb./sq. in. There has to be enough pressure on the outside to keep the contents on the inside. Further, packaging line crews must learn to avoid the damaging effect of too much pressure.

Handling Sealed Jars

Still another problem is protecting the enamel on each jar cover itself. To do this the plant devised special methods for use at the discharge from the closing machine and where the filled and sealed jars go into retort baskets prior to the retorting action.

As jars index out of the closing machine, they pass to a specially-built discharge table developed by Lakeside technicians. Jars reaching this table hit a V-shaped guide (with the V pointing toward the capping unit) which diverts the oncoming jars into two files, thus letting them accumulate in two groups—one on each side of the table.

At this point, two crew members each use a strap (held in both hands) as holders to pick up groups of jars and transfer them by strap-loads to the adjoining retort baskets. In the course of retorting which sterilizes the jar and which provides the cook for this product, there is an agitation known as retort rumble.

Protect Cover Enamel

This happens in the course of equalizing the top and bottom pressures. The cooking and sterilizing process thus shakes the jars somewhat. Unless protected, the enamel on jar tops would be scratched or scuffed by abrasion from the jars in the layer above it.

To avoid this, the packaging line crews put a sheet of three-ply synthetic rubber belting, 1/16-in. thick, on top of each layer of jars in the retorting trays. Once stacked in these trays, which are like large baskets, the jars move into the retort kettles and are closed and sealed for the retorting action. After this they move through a cooling canal, then are stored prior to labeling or go through a labeling operation prior to storage.

How To Check Vacuum

At the entrance to the Burt labeler there is a "dud" detector. This is a device that measures the concave depth of the top surface of each jar cover. This indicates the presence of vacuum. The depth that the wheels go down when passing over a jar shows the effect of the vacuum. If no vacuum is present, the jar is automatically "kicked" out of the label line.

A simple but effective spot means of checking vacuum also comes into play. A crew member simply taps the top of a filled and sealed jar with a pencil. A sound somewhat like a high-pitched note indicates presence of an adequate vacuum. However, if the tap of the pencil gives a sound somewhat like a dull thud or thump, it is a clue there is something wrong with the vacuum—it may be lacking. Thus do these techniques check on the efficiency of the packaging line operation, and regardless of whether labeled directly or later, all jars go through the standard labeling operation. *(End)*

CAREFUL HANDLING OF JARS protects enamel covers. V-shaped guide (foreground) accumulate jars in two groups—one on each side. Crew transfers jars to retort baskets with strap holders.

COOKING AND STERILIZING DURING RETORTING shakes up jars. Three-ply synthetic rubber belting covers each layer of jars in retort basket to protect enamel tops. Otherwise agitation, known as retort rumble, would damage them.

Practical pointers to better folding carton performance

Part I—Developing your requirements

Here is the first of a series of articles reviewing some basic folding carton problems. To delve into the intricacies of the subject our editors* called on a number of representative carton users and suppliers. While the aggregate sample is in no sense a statistically selected specimen, it does represent a workable consensus of qualified experts in companies large enough to have an adequate range of experience. To stimulate free sharing of views, the editors agreed to neither quote nor identify the participants. To these industry experts we are most grateful. The only reward for the hours they spent with our editors is the satisfaction of helping to crystallize worthwhile experience to share with 35,000 people in technical and operational packaging.

Increasing emphasis on automatic packaging directs particular attention to the quality and uniformity of package fabrication. In contrast to packaging formed as a filling line operation, folding cartons in general present the difficulties inherent in packages formed and fabricated elsewhere, typically in a supplier's plant.

Therefore, any discussion of getting the most from carton performance dictates study of fabrication techniques which affect performance on the packaging line. This poses two difficulties: (1) The basic question of just how much about the supplier's manufacturing art the package user needs to know, and (2) the problem of what to talk about first when applying performance standards to fabrication methods.

Anyone digging into the subtleties of folding cartons faces queries such as these: How do you know how to specify performance unless you have a realistic knowledge of just what carton makers can do? How do you know what to ask of your carton supplier unless you know your own requirements precisely? How do you know what to look for in a carton? What points of carton fabricating are important in getting packaging line effectiveness?

It all boils down to the old question of which comes first—the chicken or the egg? But for convenience of presentation, this and succeeding articles of this series are discussing the subject as follows:

1. Basic aspects of paperboard as related to folding carton performance.
2. Fundamentals of carton manufacture as related to packaging line effectiveness.
3. Special points deserving attention at the user's own plant.
4. Crystallizing these factors in the development of articulate specifications.
5. Using the foregoing to evolve a pattern of user-supplier relations of continuing benefit to both parties.

Looking at board. Thus, under (1) above we might examine the choice of board, its coatings, or other treatment, and its ability to respond to specific attributes of performance. The latter might include water absorption, slip, stiffness, moisture content generally, bending properties, and the relationship to performance of items such as caliper, basis weight, etc.

Manufacturing or structural features. Turning to (2) above, we need to consider primarily scoring and prebreaking, giving emphasis to these because of their basic importance in high-speed packaging line performance. But at the same time, we should look at points such as gluing, ink and color, spray treatments, and problems of structural uniformity—such as inside dimensions.

Points for users to watch. In a package user's own plant, as noted under (3) above, it is important to consider preconditioning, storage and handling of cartons, filling details (such as temperature of product) that directly affect carton performance, and matters of scrap and allowances. It becomes important to pinpoint areas of special attention that help a user get out of the carton all the performance the supplier built into it.

Developing specifications. Some users go off the deep end and spell out far too many details, often tying the hands of the supplier in its effort to produce the desired cartons. At the other extreme some users leave the whole business to the carton maker, expecting it to meet vaguely defined performance requirements. *(Turn page)*

*Supplementing the work of our regular editorial staff, David L. Olsson, who is doing both graduate work and teaching at the school of packaging of Michigan State University, joined our staff last summer. He spent practically all of his time in the field, devoting much of it to gathering material for this series.—R.B.H.

Ellisco

S·E·A·M·L·E·S·S CANS

MAKE ATTRACTIVE, ECONOMICAL PACKAGES FOR YOUR PRODUCTS

easy-to-use-ship-store

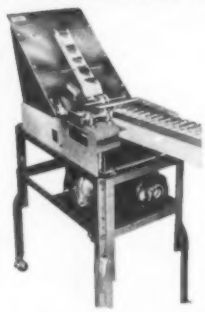
Deep Style 22.
Also, Flat Style 12
Lithographed Cans for Tape and Other Products
Flat Style 10 LabelStik, Also, Deep Style 20
Screw Top Style G6
Flange Top Style G3 for hermetic sealing

Some of the many ELLISCO Seamless Cans available are shown. They are **light weight, made of one piece, unbreakable**—ideal for packaging many products, for laboratory use and for handling and storing small parts. Capacities: 1/16 oz. to 16 oz. Also many sizes and styles of seamed cans available. Write, wire or call us with your can packaging problem. Ask for Bulletin 116.

GEORGE D. ELLIS & SONS, INC.
4022 N. American St. Dept. PE-1 Phila. 40, Pa.
BAldwin 3-3405

Circle No. 230 on Card, Page 71

NEW LABELETTE FEATURES AUTOMATIC ELECTRONIC FEEDER



Designed To Make Your Labeling Faster, Easier and More Economical

- New unit automatically feeds, handles and places labels of various lengths onto round containers.
- No buttons to press, no levers to operate, no hands needed.
- Auxiliary manual feed unit for special labeling applications.
- Labels glass, tin, fiber containers.

Come in for a free demonstration or write, phone for further details.

LABELETTE COMPANY
216 So. Jefferson Chicago 6, Ill.
Telephone: FR 2-1215

Thus, items deserving attention under (4) above will draw an outline for a workable middle ground, to show a user how to specify cartons calculated to attain a given level of performance. Both users and suppliers, who have gone through the mill on this, show that it is not as complicated or mysterious as it may seem.

Living with your supplier. Once the user knows the specific performance a carton should meet, and once it can develop requirements with due regard for the vagaries and limitations of the supplier's manufacturing process, it becomes fairly easy to work out a *modus vivendi* so that both parties may live together, as suggested under (5) above. This need not be an armed truce, as sometimes is the case, but rather a joint venture with the common objective of having cartons that do their job consistently well under conditions of production urgency.

What About Paperboard?

Obviously, there is no general rule governing selection of a board for a particular carton. Users have to balance the considerations of finish, caliper, composition, basis weight, price, bending properties, and other "standard" attributes of folding carton stock. But users and suppliers disagree as to who makes the final selection. Experts in some user companies urge the user to make this decision himself. Some supplier specialists contend that selection by a user limits the ability of a supplier to produce the desired carton.

Some users go so far as to insist that each production run of cartons be made from the same production run of board from the mill. Their contention is that so specifying assures jam-free performance on their lines because of the cartons' going through on a particular run being from the same rolls of board—and hence, presumably uniform.

Other specialists think there is a basic objection to this type of approach. They discount the value of cartons made from the same run of board. They point out that, in spite of best quality control measures taken by the board mill, a given sheet of board can vary as much within a run, as from run to run, throughout its three dimensions of machine direction, cross-machine direction, and thickness or caliper of the sheet.

Still another user company insists on first explaining to its board and carton sources just what is being packaged, the operating conditions, expected shelf life, and similar minutiae of performance. Then, and only then, does it ask for samples of board from which the cartons are to be made.

In this way, selection of board is left to the supplier, but even under these conditions it does not have a free hand. The usual problem is that of price, and the supplier, in meeting a requirement of this sort, must balance the various performance factors in the board against the price which can be justified. Thus it is a process of compromise.

Experienced users and suppliers alike warn that, more often than not, neither the cheapest nor the costliest board is best for a given application. Cheap board may present problems of strength limitations or the imparting of odors or flavors. Too costly a stock may present a condition of overpackaging, such as more whiteness, printability, or surface quality, than the product and carton really merits.

Performance Attributes

Perhaps the simplest way to evaluate board is in terms of required performance, for example, of slip. Reduced to simplest terms, this means that, when a carton drags while going through automatic packaging machinery (or when it should drag back and does not), there is need of slip treatment. This is something the carton maker does, but the user needs to understand the problem.

How Much Slip?

Slip can be a particular problem with an unprinted carton. Users and suppliers report running into actual changes of the board itself

Circle No. 231 on Card, Page 71
Circle No. 232 on Card, Page 71

Biggest Packaging Papers Selection Ever!

5200* Grades of Krafts, Glassines, Greaseproofs, Waterproofs—in functional combination with Poly / Foil / Films / Cello / Wax / Asphalt / Stainless Laminants and others

* And even more — for new grades are in constant development. If we don't have the protective papers you need, Thilco will make a grade to meet your own specific requirements.

THILCO PAPERS INCLUDE:

- **WRAP-DRI** Waterproof protective papers
- **THILCO-TUF** Stainproof laminated papers
- **VAPOTITE** moisture-vapor barrier papers
- **POLY-COATED** and special treated papers
- **MG and MF** natural and colored krafts
- **GLASSINE** and greaseproof papers
- **SPECIAL BAGS** and case liners

THILCO
Functional Papers

THILMANY PULP & PAPER COMPANY
KAUKAUNA • WISCONSIN

NEW YORK · CHICAGO · DETROIT · BOSTON
CLEVELAND · CINCINNATI · CHARLOTTE

—as a phase of the problem of slip. There may be a difference in the calender solution, the density, or the surface characteristics of the sheet. Some manufacturers spray unprinted cartons with a slip treatment by installing on the cutter and creaser the equipment usually found at the printing press.

Slip can also be a major consideration for waxed cartons, printed or unprinted. The surface characteristics of the board, the type of wax treatment — "hot," "cold," "cast," or impregnated — the amount of wax applied, the conditions under which it is applied, the composition of the wax, and derivatively its softening point, hardness, scuff resistance, and surface characteristics can influence carton runability. These various properties *as a unit* must therefore be geared to the particular type of packaging machinery and the specifics of the operation in the user's plant or plants.

Users must be careful in spelling out requirements for slip and no-slip. On unwaxed stock, carton makers have various well-known ways of using offset spray treatments or additives to printing inks, for example, but need guidance from the user. At the same time, experts in packaging line performance warn users against borrowing bodily the specifications of one company without making sure the requirements are applicable.

Companies sometimes fall into the trap of trying to follow the practice of some nationally known manufacturer. For example, they may think that, if a certain treatment works well for some soap manufacturer, it will work equally well for them. This is not always so. The important point is making sure that the treatment specified matches the operating conditions of the packaging lines for which the cartons are being treated.

Stiffness Important

Stiffness is usually an important requisite of carton stock, so that the resulting cartons do not bulge out when filled. This means, as experts in user companies assert, that the board needs enough stiffness to hold its shape after being filled with the product for which the carton is designed. Another reason users cite on behalf of adequate stiffness is that the cartons form properly on the packaging line machinery. A third reason for stiffness is so that the carton maintains its shape and appearance to assure acceptability by consumers.

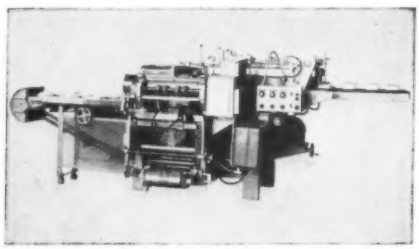
Still other factors relating to stiffness of board involve form stability and springback. Form stability means, for instance, that the package should not get soggy in a freezer or when exposed to the elements, as bottle carriers usually are. Similarly, the package should protect the product against damage resulting from physical abuse of the carton or lack of strength in the board.

Too stiff a board, in some instances, can impart too much springback, say experienced users. They point out that, where there is too much springback, there may have to be longer time in the forming machinery to be sure the glue sets up. Another possibility is that a relatively stiff board may require a glue with a faster, firmer tack.

Grain direction of the stock can have a role in controlling bulging and machine operation. Sometimes, having cartons with the grain running in a given direction can minimize bulging; also, make for better machine performance. Weighing these two factors against one another is important — one may have to decide on a happy medium.

Moisture Content

Some users feel that moisture content is one of the most, if not the most, important characteristic of board. They say this has more effect than anything else on the running of the finished cartons on packaging machinery. The primary responsibility for proper moisture content is with the board mill, and at least one experienced user suggests writing into specifications the requirement that board mills adhere to rigid moisture control require-



THE SOLUTION TO WRAPPING FRAGILE BAKED GOODS . . . QUICKLY, SAFELY! Battle Creek's Model 43L has been designed specifically for the bakery with the problem of packaging small bakery products . . . such as cookies, iced cupcakes, turnovers and pastries. A machine capable of wrapping from 40 to 70 packages per minute, the Model 43L handles each package gently, smoothly and quickly. Package sizes may vary from 3" x 1¾" x ½" to 10" x 4½" x 4". Wrapping material may be printed or unprinted cellophane, with or without separate top labels. Each package is a miniature bakery "showcase." **Battle Creek *"Continuous Flow"* Packaging Machines, Inc., Battle Creek, Michigan.**

ments. However, the carton plant also has responsibility to maintain proper controls, so that cartons with proper moisture content reach the user.

Just what is the correct percentage of moisture in a board for folding carton use? Opinions vary, depending on operating conditions and projected uses of the cartons resulting from the board, but the figure of 6 per cent appears typical —at least it is illustrative.

Absorption

Absorption is another significant attribute of board for folding carton use. Water absorption tests are used by the board mill, carton plant, and user to determine and control the gluing characteristics of the carton on the packaging line. Too rapid absorption, particularly from both top and bottom surfaces, can result in glue that sets up before the carton flaps can be folded over and properly mated. Non-absorption, or too slow absorption from even one surface (usually the top), can result in glue that fails to set quickly enough.

In either instance, the net result is unglued or improperly glued cartons, and often, spilled product. No blind rules can be set down for what is proper absorption. It is an attribute which, within tolerances, can be tailored to the user's packaging line operations. It presupposes the kind of cooperative working relationship between user and supplier—that the supplier knows what the user's operations and requirements are.

Oil absorption tests, generally conducted by the board mill and carton plant, are frequently used to specify and determine how much ink is necessary to cover the sheet properly, and maintain printing color and uniformity.

Other absorption specifications and tests are employed by the board mill and carton plant, and sometimes by the user to determine and control subsequent converting operations, the foremost of which are waxing, laminating, and coating, in the carton or user's plant. In general, the absorption characteristics of board are decisive for the packaging line performance of waxed cartons, and will vary widely depending on the specific end use of the carton and the type of packaging machine on which it runs. Absorption characteristics, for example, of board used for waxed, oleomargarine shells will in no way resemble absorption characteristics of board used for waxed, frozen TV dinner cartons, and in turn both will differ from waxed, milk carton stock.

This is perhaps the most universal functional protective packaging requirement of converted board, especially for food packaging. Methods for imparting water vapor transmission resistance to board vary widely, with the amount of protection and the way it is built into the board generally tailored to product requirements and cost limitations.

Experts in this field suggest study of the different water vapor

New PACKAGE COMPRESSION TESTER

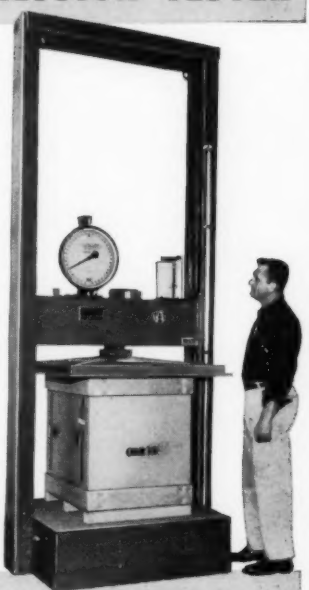
Built specifically for tests on shipping containers, packages and packaging materials.

Rugged and simple in construction, this new L.A.B. tester's relatively low initial cost makes it ideal for the container industry.

Available in 2,000, 3,000, 5,000 or 10,000 lb. capacity, with load opening 40" sq. x 48", 60" or 72" maximum box height.

Compression load is indicated by precision dynamometer scale. A load vs. deflection recorder is optional.

Write for full information on this unique and practical compression tester.

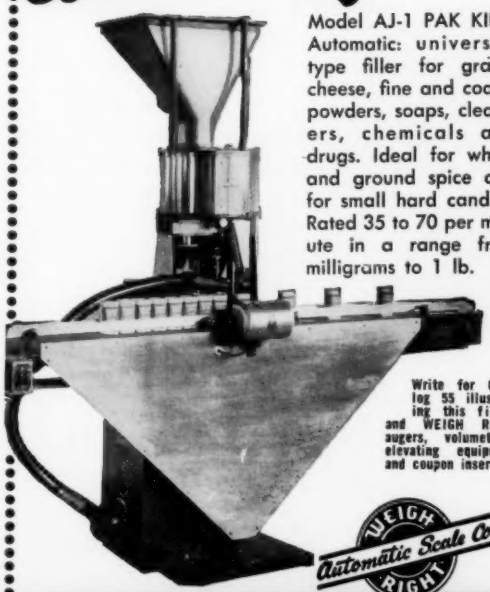


L.A.B. CORPORATION
Skaneateles 5, N.Y.

A certified NSTC Testing Laboratory. Also makers of Conbur Incline-Impact Testers, Vibration Testers, Drop Testers and Quick-Release Hooks.

Controlled PACKAGING

Model AJ-1 PAK KING Automatic: universal-type filler for grated cheese, fine and coarse powders, soaps, cleansers, chemicals and drugs. Ideal for whole and ground spice and for small hard candies. Rated 35 to 70 per minute in a range from milligrams to 1 lb.

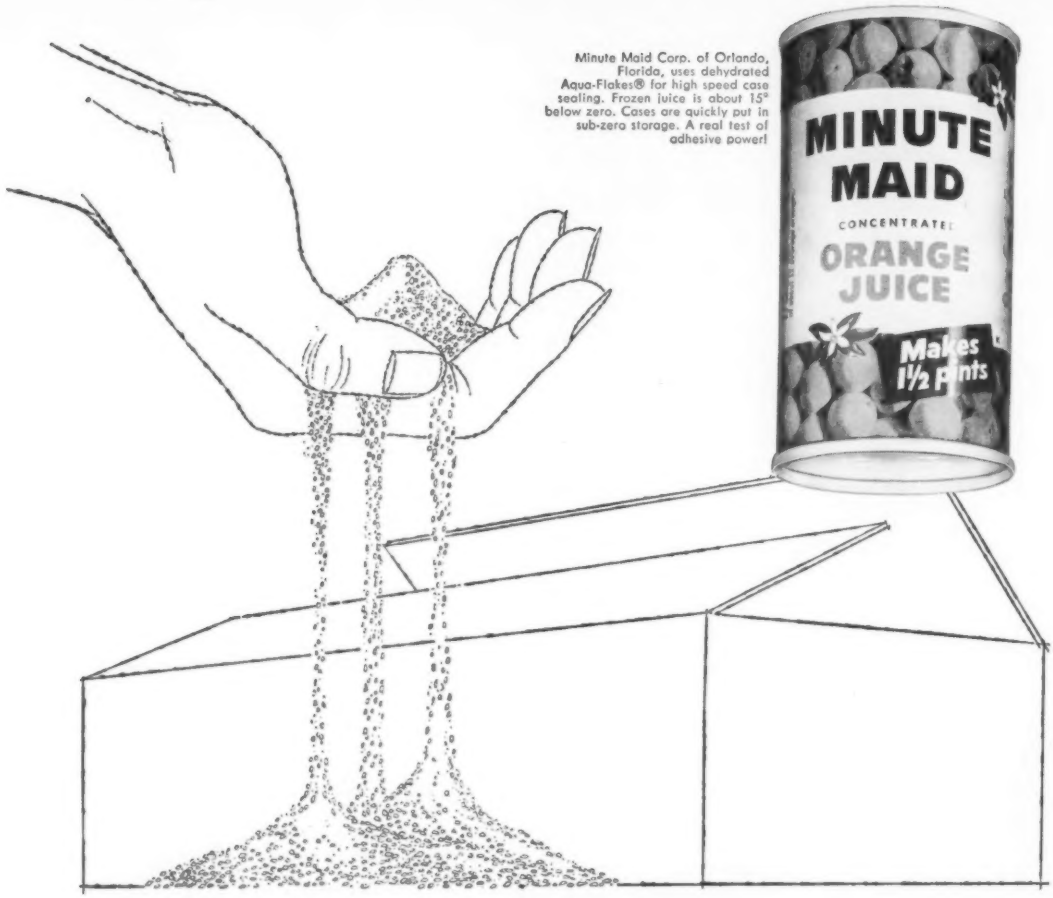


Write for Catalog 55 illustrating this filler and WEIGH RIGHT augers, volumetrics, elevating equipment and coupon inserters.

WEIGH RIGHT Automatic Scale Co.

WEIGH RIGHT AUTOMATIC SCALE COMPANY
JOLIET · ILLINOIS · U.S.A.

Dehydrated Adhesive



Minute Maid Corp. of Orlando, Florida, uses dehydrated Aqua-Flakes® for high speed case sealing. Frozen juice is about 15° below zero. Cases are quickly put in sub-zero storage. A real test of adhesive power!

REDUCES CASE SEALING COSTS

Aqua-Flakes are high quality liquid glue that has been dehydrated. They give lowest possible cost wherever volume is large. Only the water has been removed. Only the water has to be replaced. Simply by mixing the flakes into water.

Aqua-Flakes eliminate the problems of old-fashioned cold water solubles and cookup dextrines. No lumping. No changing characteristics due to heating, cooking, storing. No evaporation and bodying up. No wasted batches.

Aqua-Flakes film smoothly. Tack fast. Give excellent coverage. They are used in combining, laminating, heading and wrapping, tube winding, etc. Contact your nearest National office for information.

ADHESIVES DIVISION

National
STARCH and CHEMICAL
CORPORATION
750 Third Avenue, New York 17
3641 So. Washtenaw Ave., Chicago 32
735 Battery Street, San Francisco 11

transmission characteristics of various barrier materials, and suggest using tests for this condition when the board is flat and also when it is scored and folded. Specialists assert that, to obtain correlation between carton performance and WVTR tests, the tests must be run on scored and folded, as well as on flat, board.

The reason for this is that board which has been scored and folded may have a much higher WVTR, due to the fold, than a flat sheet. This can be particularly true along, and adjacent to, the folded scores of the carton, which receive a severe ironing action on the straight line gluer during the side-sealing operation in the carton plant.

Suppliers and users both can be badly misled by attempting to predict carton performance from the WVTR of flat board. The more experienced specialists in this area insist there is no substitute for actual carton tests under simulated conditions with the product to be packaged to determine whether or not a given barrier material will fulfill the user's requirements. They caution that both user and supplier should use the WVTR tests on both flat, and scored and folded board only as a guide to screen out the chaff from the possible wheat.

To obtain desired performance at lowest possible cost, both user and supplier will find it advantageous to conduct board and package tests, and to share information concerning product shelf-life requirements and barrier properties at specified conditions of temperature and relative humidity.

Bending Of Board

Bending properties of board merit much thorough discussion in regard to prebreaking and score details, in a subsequent article. But here, in the context of discussing board as such, it is important to note the suggestions of articulate users that bending properties of the various boards used for cartons

(*Continued on Page 78*)

Good news for users of tape

Here's the latest idea in sealing cartons... the DIAL-TAPER. You dial the length of tape and the DIAL-TAPER does the rest automatically ... measures tape accurately, moistens tape with warm water and cuts off clean.

Users report "up to 50% saving in TIME, 25% saving in TAPE, plus stronger, neater package. Tape sticks tight with one pass of the hands." Used by U. S. Government, Ford, General Electric, all types of business.

For free booklet DT-5 write to Marsh Stencil Machine Company, Belleville 34-A, Illinois. T-23

Circle No. 237 on Card, Page 71

FIBROUS SILICONE RUBBER

- *High permeability*
- *Excellent compression — deflection*
- *Outstanding compression set*
- *Good tensile and tear strength*
- *−65°F to 500°F temperature range*

COHRlastic FSR is a new and unique silicone rubber product. The unusual and random orientation of silicone fibers provides many useful properties superior to silicone sponge and foam. It should be extremely suitable for many applications including shock and vibration isolators, cushions, thermal insulators, high temperature press pads, pressure moldings, etc. COHRlastic FSR is being introduced in sheets 1/4" thick, 9" wide, 6' long, and in a density of 20 lbs./cu. ft. As applications develop, COHRlastic FSR will be made in continuous lengths, larger widths, different thicknesses and various densities in the range of 15-25 lbs./cu. ft.

FREE SAMPLE and data — Write, phone, or use inquiry service

Leader in fabrication of silicone rubber products.

CHR **CONNECTICUT HARD RUBBER**

Main Office: New Haven 9, Connecticut

Circle No. 238 on Card, Page 71

Regardless of your gluing needs . . . spotting, rolling, striping, doweling, etc. . . . you can incorporate new Internal Valve FF Glue Guns in your automatic machines . . . existing or new! Over 400 sizes, models to choose from . . . with each unit designed for fast, clean gluing without waste. Easy installation. Guaranteed. Send for your catalog on this marvelous way of "Controlled Gluing". Oh yes . . . FF Guns can be used manually . . .

JOHN P. FOX COMPANY, INC.

1107 S. Mountain • Monrovia, California

Select areas open for agents and distributors

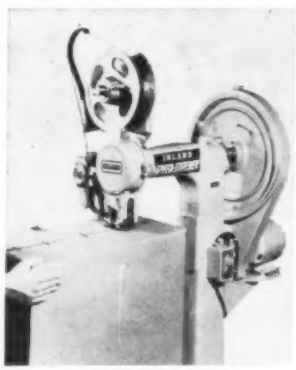
Circle No. 239 on Card, Page 71

Announcements of machinery and products

1. Beneath each announcement is a code number. As you select items on which you want more information, *note* this number.
2. Now, *circle* the corresponding numbers on the postcard, page 71.
3. Next, *fill* in your name and address.
4. Then, *mail* the card — we pay the postage.

Wide-Crown Stapler

Inland Wire Products Co. has developed an electrically driven, wide-crown Speed-Stitcher which



forms staples with crowns up to 1⅜ in. wide from coiled wire. Unit produces 12,500 staples without reloading the 25-lb. coil spool. Wire is available in either galvanized or coppered finish. Speed-Stitcher staples through single- or double-wall corrugated, A-, B-, or C-flute, also fibreboard, and it is available in 12- or 20-in. throat, bottomer, straight arm, thin blade and combination models. Circle No. 1.

Bottle Filler

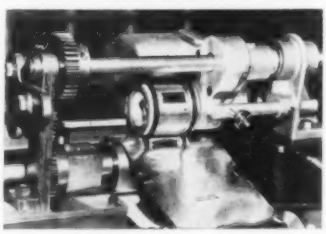
Crown Cork & Seal Co., Inc. is now producing its new 28-6 Uni-Blend filler with speeds ranging from 220 bottles/min. for 6½- and 7-oz. size to 60 bottles/min. for 32-oz. size. Machine features — new hopper design and automatic cut-off device, both to minimize agitation of crowns; six-crown turret; bottle-actuated disconnect clutch to stop crowner when no bottles are on filler; no-crown detector to stop machine when crown hopper is empty or crown becomes jammed. The 28-valve unit is equipped with a balanced pressure gravity flow system. An extra wide plate bearing reduces vibration and assures a steady operating platform for filler turret. Circle No. 2.

Tear Tape For Padded Bag

Jiffy Manufacturing Co. announces that its Jiffy padded shipping bag now has a tear tape opener—making it a stock packaging material equipped with a built-in opening device. Bag outer liner is made of golden-colored, rather than brown, extensible Clupak kraft paper of 70 lb. basis weight. The bag seam — which is secured by a newly-developed waterproof adhesive— has been repositioned, allowing large printing area on back and front for imprints or instructions. Circle No. 3.

Production Line Printer

Bell-Mark Corp. has developed a miniature printer, electrically operated for imprinting registered



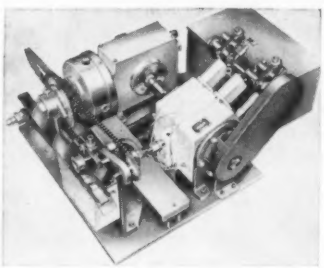
marks on continuous or intermittent product runs without requiring change of cylinders. Model 1006-A Electra-Printa is adaptable for kraft paper, polyethylene, cellophane and is available with 3x1- or 3x2-in. imprint areas. Unit prints up to 100 impressions/min., is solenoid operated, can be installed to operate with wrapping and bag making machines, and has ball bearings on all rollers for free-rolling action. Circle No. 4.

Polyethylene Resins

W. R. Grace & Co., Polymer Chemicals Div., announces the availability of two new types of film grade polyethylene resins. One is an intermediate density (0.940) resin suited for overwrap applications and other packaging uses for polyethylene film bags. The other film resin (0.960 density), in glossy white, is intended for extrusion of heavy gauge film or sheet (0.004 to 0.010 in.) to produce specialty packages. It can be extruded by chill roll casting into rigid film or sheet with high gloss that can be decorated by a number of processes. Circle No. 5.

Adhesive Applicator

United Shoe Machinery Corp. announces the development of its Model BW Thermogrip applicator,



a high-capacity applicator to glue plain kraft box boards, materials surfaced with foil and polyethylene and many waxed boards. Unit applies 1,500 ft. of ¼-in. seam or 1,000 ft. of continuous ⅜-in. seam /min. Adhesive may also be applied in dots or broken-line patterns. Gluing mechanism may be fitted for mounting in an inverted position or on its side so that materials are passed against transfer wheel for gluing from above, below or to a vertical surface. Circle No. 6.

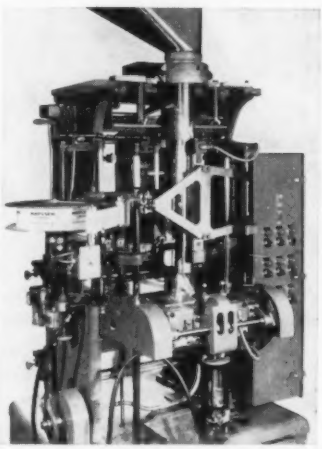
Returnable Shipping Containers

Delaware Barrel & Drum Co. has introduced returnable composite shipping containers for liquids. Available in 5-, 15-, 30- and 55-gal. sizes, the new composite containers consist of an inner rigid polyethylene drum and an outer wirebound wooden octagonal drum. All sizes have passed the M.C.A.-I.C.C. tests for regulated liquids, and may be shipped under permit with "any liquid safe in

polyethylene," Delaware Barrel & Drum says. Inner component is a polyethylene drum and outer pack uses wood members reinforced with double-dipped galvanized steel binding wires and staples. The 55-gal. size has a built-in pallet base. The poleythylene drums are molded in one piece and normally have two heavy-duty flanges with internally threaded openings to accommodate the 2-in. and ¾-in. drum plugs. Flanges protrude up through the recessed "head" of the wirebound. Circle No. 7.

Header Label Attachment

Hayssen Manufacturing Co. has introduced a new header label attachment for its Compak auto-



matic packaging machines. Labeler automatically feeds and indexes label from roll stock and attaches it to formed film as it pauses on filling tube. Attached label is pulled down tube as film is advanced through machine to final sealing stage. Sealing jaws heat seal label as they seal pouch. Label is cut from roll as it is attached to film. Labeler works at speed of machine to which it is attached. Circle No. 8.

Rotary Imprinter

Oliver Machinery Co. announces the availability of its No. 809 rotary imprinter which uses roll-type labels to imprint variable detail on preprinted label web at time of label application. The 809, interposed between source of labels and labeler index wheel, produces a registered imprint on each label at speeds to 200/min. Label guides are adjustable to match width of label web being imprinted, and to guide label web as it is moved and simultaneously printed by the feed-print segment

A cleaner, faster operation resulted as International Equipment Co., Boston, switched from excelsior (left) to Cel-Fibe wadding (right) to wrap motors, parts, test tubes, and dynamically balanced instruments in its line of precision centrifuges for laboratory uses.

CEL-FIBE® protective packaging doubles output, increases safety

"Cel-Fibe cellulose wadding is the best packaging material we have ever used," says C. Clifford Hodge, production coordinator for International Equipment, leading supplier of laboratory centrifuges, citing these improvements:

Savings in time, labor. An operator packs double the amount—Cel-Fibe wrapping takes only half as long.

Savings in materials. With Cel-Fibe, one carton holds as much as was formerly packed in two cartons or a wooden case. Cel-Fibe ends the need for separators to partition tubes, fragile parts, and glassware.

Savings on storage. Wadding, paper, and other packaging materials are kept with space to spare in a room that had previously been set aside for storing a ton of excelsior.

Savings in shipping weight. Cel-Fibe permits use of fewer, lighter cartons.

Savings in maintenance. Apart from easier handling, non-shredding and non-powdering Cel-Fibe leaves no dust in the air or dirt on the floor, reduces clean-up time . . . also makes it easier, faster, and less messy for customers to unwrap orders.

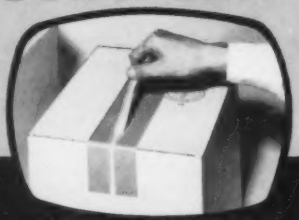
Savings on returns. Low-sulfur and neutral-pH Cel-Fibe guards metals from corroding and surfaces from marring, avoids return of centrifuges bent or unbalanced in transit.

Your packaging problems can probably be lessened by learning how "success is certain with Cel-Fibe" in meeting military specifications and civilian requirements for cushioning and surface protection. Cel-Fibe is always available, when and as you need it. For more information—*write, wire, or phone:*

CEL-FIBE
Division of Personal Products Corp.
Milltown, N. J. • Milltown 8-0700

ONE OF THE Johnson-Johnson COMPANIES

IF YOU HAD TO OPEN 'EM- HOW WOULD YOU SEAL 'EM?



This Manufacturer tape-seals the modern GENERAL Way...

"RIP-CORD" feature now included

It's so easy to open without injury to persons, contents or shipping cases. Cases are more dust proof, more pilfer proof and are undamaged for re-use. Everybody gains.

These Manufacturers use the old fashioned methods

These glued or stapled cases must be torn or cut open. It's not easy, it's dangerous to persons and contents. It also wrecks the box. You don't win much customer good-will this way.

FOR NEARLY 15 YEARS General has pioneered and built automatic taping machines of advanced and exclusive design. THOUSANDS ARE IN USE, worldwide, by both the manufacturers of corrugated containers and those who ship in corrugated containers. General leads — *there is no equal!*

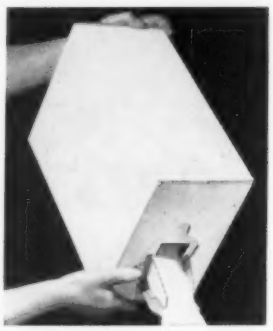
It costs to put off . . .WIndsor 4-0644

General Corrugated Machinery Co., Inc.
PALISADES PARK 17, N. J.
CABLE: GENCO

and impression roller. Label web drag unit serves to steady web as it moves through imprinting machine. A micro-adjustable-driven-type removable ink pot is of unit-type construction and includes a driven inking roller and doctor blade. Circle No. 9.

Corrugated Box With Pouring Spout

Continental Can Co. announces the availability of a sift-proof corrugated box with a pouring spout,



designed for domestic packaging of all granular and powdered materials. This rectangular box has a corrugated pour spout that opens and closes and locks into position when opened. Spout permits controlled dispensing of contents. Adaptable to conventional automatic packaging equipment, box is filled from bottom or non-pour spout side. Circle No. 10.

Sample Box Making Machine

Bar Plate Manufacturing Co. announces its Micro-perfect sample boxmaker machine combining layout and creasing and layout and cutting—principle used duplicates operation on the press. Unit involves a glass top surface adjustable from horizontal to 30°. Stainless steel straightedge, beveled two sides, is attached to roller chain and is operable by knurled handles. Board is placed into grippers and straightedge moves underneath board. Desired groove is selected and with depressor, crease is made. After all creases in one direction are obtained, cutting is done by placing straightedge above board. Sheet of board is then turned to 90° for opposite creasing and cutting. Circle No. 11.

Cushioned Shipping Bag

Henry B. Katz Industries, Inc., Zip-Pak Div., has introduced a new cushioned shipping and mailing bag with self-seal closure and built-in zip cord opener made from single-faced corrugated. Zip-Pak has single flap closure with

Memo to—an ENGINEER

with a lively curiosity about packaging

You are around 30, you probably have a degree in mechanical (but perhaps in industrial) engineering, and you have the knack of delving into packaging problems.

Your present work may be (but not necessarily) on the production lines of some package-using company. Or you may be a technical service specialist for a packaging machinery builder or a supplier of packaging materials.

You want the challenge of a position that will let you do some traveling and dig even more deeply into packaging problems. And you want the satisfaction of sharing your findings in a nationally circulated magazine reaching 35,000 readers in technical and operational packaging. If so, you may be the man we want. Write a letter, in complete confidence, outlining your education, experience and background to:

R. B. Holmgren, Editor
PACKAGE ENGINEERING
185 N. Wabash Avenue
Chicago 1, Illinois

Zip-latex applied to flap and to top of bag—plus Zip-string tear cord built into bottom of bag for quick opening. It is made in ten sizes from 4x8 in. to 14x20 in. Circle No. 12.

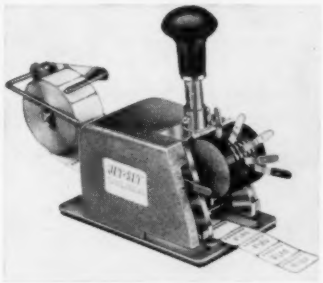
Bag Sealer

Errich International Corp. announces its Speedy Auto bag sealer has a capacity of 40 bags/min.

Machine (when used in conjunction with its maker's bag opening and loading machine) permits one operator to pick up product, load it in bag and dispose of it in a chamber. Sealer seals package, cuts off polyethylene excess, and automatically removes package to box or conveyor. Unit handles bags from 3 in. wide x 5 in. long, to 7 in. wide x 13 in. long, and occupies maximum of 6 sq. ft. of floor space. Circle No. 13.

Label And Bag Pricer

General Marking Equipment Co. announces its Jet-Set label and bag pricer which feeds labels automatically. Lever controls for setting copy lock into position for continuous printing. Type wheels are made of heavy gauge steel. Unit uses self-adhesive labels available in two sizes, $1\frac{3}{16}$x$\frac{3}{4}$in. and $1\frac{13}{16}$x$\frac{1}{2}$ in. Circle No. 14.



Flexible Plastic Foam

Union Waxed Paper Corp. introduces a polyurethane foam with a self-seal backing. The self-seal adhesive on one side of foam is protected by a release paper which peels off. Foam is available in standard size sheets up to 80 in.

end costly overweights

speed production

Packagers of dry powdered, granular or crystalline materials can do the job more economically on the right model of Gump-built Equipment. Weighers for manual lines—up to 50-pound discharges. Automatic bag feeding, opening, weighing and ejecting equipment (illustrated). Automatic can, jar or carton lines. Accurate weights and speedy, dependable operation save product and packaging labor. *Choose your equipment to fit the job.* Write for recommendations—tell us the material, weight, container, and capacity.

B. F. GUMP CO.

1346 S. Cicero Ave., Chicago 50, Ill.

Circle No. 243 on Card, Page 71

Only gummed tape is

EASY OPENING!

...and easy opening also means

RE-USABLE CARTONS!

DARLING'S

Unpasteurized BONE GLUE

DARLING & COMPANY

GLUE DIVISION

4201 South Ashland Avenue, Chicago 9, Illinois

Suppliers of Animal Bone Glue to Gummed Tape Manufacturers

WedgLoc

CARDBOARD

PARTITIONS

PROTECT

PRODUCTS

BEST

W. J. Bradford

PAPER COMPANY

301 WEST 16TH STREET

HOLLAND, MICHIGAN

SINCE 1924

MID-STATES packaging wire to meet modern requirements

MID-STATES STITCHING WIRE

gives you frictionless, uniformly smooth flow off the coil and through the stitching head to assure high-speed, uinterrupted operation. Available in 5, 10, 25 and 50-lb. coils. All standard gauges. Special gauges on request. Galvanized and copper-coated finishes.

ALSO wires for a wide variety of uses such as tying, baling, binding, stapling, et cetera. A complete line of cost-savers to meet every packaging requirement. Write today for further details, samples and prices.

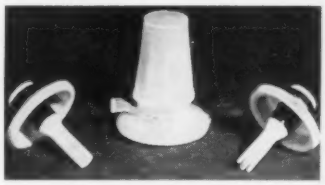
MS SW
MID-STATES STEEL & WIRE COMPANY

MID-STATES STEEL & WIRE COMPANY
CRAWFORDSVILLE, INDIANA • JACKSONVILLE, FLORIDA

long, and in cut-to-size sheets, in thickness from ⅛ to 1 in. Available in five standard colors or matching colors. Circle No. 15.

Tamper-Proof Cap

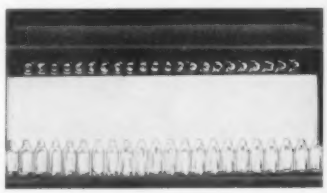
Aerated Container Corp. has introduced a new tamper-proof Tear-M-Scru cover, designed as



companion item for the non-metallic Aercon tilt valve. Cover completely seals container and has to be torn open before package is put into use. Once tab is pulled off, top portion of enclosure becomes a tight screw-on top. Cover is made of an inert material so as not to react to aerosol products. Valve and cover are designed for foam and liquid products. There is no contact between the end of nozzle and cap, Aerated says. Circle No. 16.

Inspection Light

Terriss Div., Consolidated Siphon Supply Co., Inc. announces the availability of its inspection light



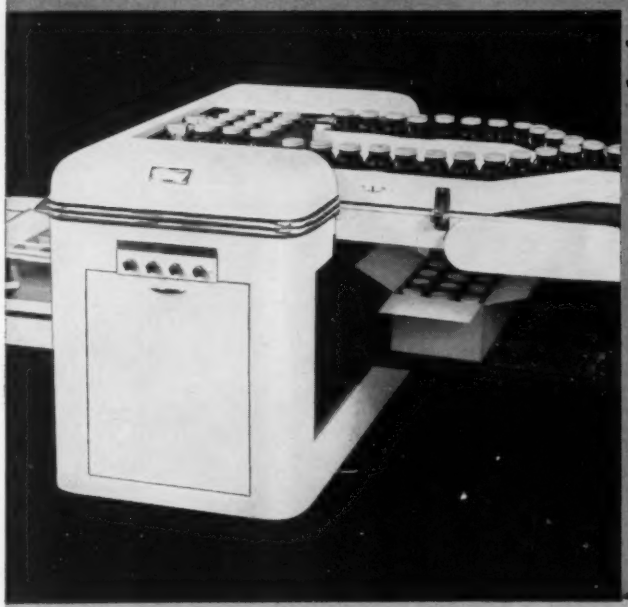
for visual inspection of bottles and containers in production line filling. Light may be mounted on conveyor to detect broken, cracked, chipped or dirty bottles and containers. In liquid and dry packaging, it can detect filling line level as well as foreign objects in empty plastic containers or filled liquid plastic containers, the maker says. Light offers operator a full top view of neck as well as complete bottle or container. They are available in 18-, 36-, and 48-in. lengths with or without spot magnifying lens. Circle No. 17.

Peelable Seal

Chester P. Rice Jr. has developed a peelable seal (patent pending) to provide easy opening for many packages. Seal consists of one, two, or more seal lines, similar

The LATEST ADVANCE in AUTOMATIC PACKING!

BUILT WITHOUT COMPROMISE TO PACK BEST



MILLER HYDRO

Air-Matic

CASE PACKER

GENTLY, AUTOMATICALLY, EFFICIENTLY PACKS

JARS BOTTLES

CANS FLASKS

. . . Regardless of Size or Shape

THE PACKER THAT GENTLY BABIES YOUR PRODUCT

OVER 700 IN USE — PROVED IN SOFT DRINK PLANTS . . . NOW A MODEL EXPRESSLY DESIGNED FOR THE FOOD, DRUG AND CHEMICAL INDUSTRIES!

The Miller Hydro Co. pioneered the development of automatic equipment for the carbonated beverage industry. Now, whether you pack food, drug or chemical products in either glass, plastic, paper or metal containers you can get the benefit of Miller Hydro's vast experience in automatic packing. The Miller Hydro Packer is air operated and electrically controlled. Neither the labels or the containers in which your product go to market are ever scarred, scuffed or scratched. Double cushioning—first by air and then by soft rubber—prevent shock which might cause breakage or mar your product's quality. Men responsible for cost, quality and production are finding it packs best!

COMPACT WITH BRILLIANT STYLING

Small, compact, and readily adaptable to any plant, the Miller Hydro Case Packer connects with any conveyor system. Clean, fresh lines help create a spic and span atmosphere.

MILLER HYDRO

Bainbridge, Georgia, U.S.A.

MAIL ME IMMEDIATELY

Miller Hydro Co.,
Bainbridge, Ga.

Gentlemen: Please send illustrated brochure giving full details on the Miller Hydro Case Packer.

Name_____

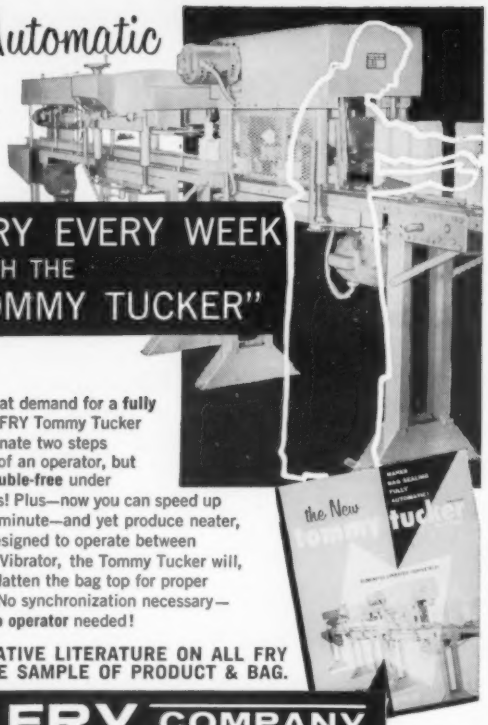
Firm Name_____

Address_____

City_____ State_____

Completely Automatic

BAG CLOSING OPERATION!



SAVE A SALARY EVERY WEEK
WITH THE
New FRY "TOMMY TUCKER"

■ Here is the answer to the great demand for a **fully automatic** bag closing line, the FRY Tommy Tucker Machine! Not only does it eliminate two steps formerly requiring the services of an operator, but also has proven itself **100% trouble-free** under strenuous production conditions! Plus—now you can speed up production— up to 50 bags per minute—and yet produce neater, uniform appearing packages. Designed to operate between Fry Closing Machines and V-30 Vibrator, the Tommy Tucker will, **1**—tuck the bag ends and, **2**—flatten the bag top for proper feeding into the CBG machine. No synchronization necessary—no bag jamming possible and **no operator** needed!

WRITE FOR NEW, INFORMATIVE LITERATURE ON ALL FRY MODELS. PLEASE ENCLOSE SAMPLE OF PRODUCT & BAG.

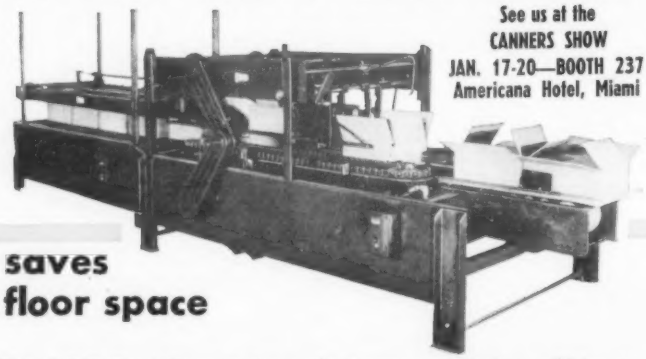
GEORGE H. FRY COMPANY

42 East Second Street, Mineola, N. Y. — Ploneer 6-6230

For more information circle No. 247 on Reader Service Card, Page 71

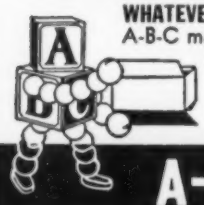
A-B-C Short Case Sealer

See us at the
CANNERS SHOW
JAN. 17-20—BOOTH 237
Americana Hotel, Miami



saves floor space

This A-B-C Short Case Sealer really increases packaging efficiency. Glues, folds and seals either or both top and bottom flaps in one operation—automatically. Speeds up to 30 cases a minute. Finest welded construction. Ball bearing construction reduces maintenance. Guaranteed not to get out of "time".



WHATEVER YOUR PACKAGING PROBLEM, there's a proved A-B-C machine to solve it—case sealers, unloaders and unscramblers, side sealers and hand gluers.

WRITE TODAY FOR DETAILS—
FLOOR PLANS & SPECS

A-B-C PACKAGING MACHINE CORP.
TARPON SPRINGS, FLORIDA

in pattern to a series of chevrons. joining together two surfaces of flexible plastic film or laminate. Seal lines are generally made with heat by any of the ordinary methods of making a heat seal, but the spaces between the individual lines in the chevron pattern are not sealed. Seal is peeled by grasping with the hands the two free end flaps or the unsealed portion of the end fold and separating the sealed surfaces by pulling or peeling back the free ends. The peeling action opens the package without tearing bag or wrapper so that it remains intact, except for the open end. Circle No. 18.

Bottom Filling Attachment

National Instrument Co., Inc. has introduced a bottom filling attachment which adapts Filamatic por-

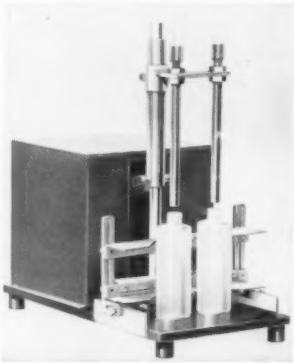


table fillers for foaming liquids. With attachment, filling nozzles are automatically lowered into bottles and then raised as liquid level rises in container. An adjustment permits rate of rise to be regulated to coincide with speed at which bottles are being filled, thus eliminating or minimizing foaming. Adjustable nesting jig adapts attachment for use with any size container up to 16 oz. Placing two bottles in nesting jig automatically actuates unit and nozzles lower rapidly into container. When nozzles reach bottom of container, liquid flow commences. Nozzles then rise as bottles are filled and stop when fill is complete. Circle No. 19.

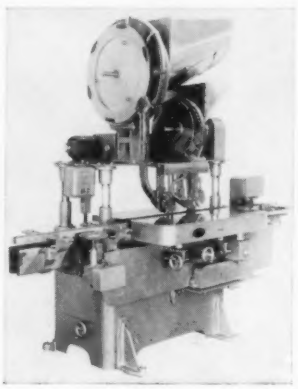
Extruded Nylon Film

U. S. Gasket Co.'s Plastics Div. of The Garlock Packing Co. announces an extruded nylon film in a variety of thicknesses, .002 to .060 in., and in widths up to 18 in. Material is grease, abrasion and vapor resistant, has a low coefficient of friction, low permeability factor, and can be steam

sterilized, Garlock says. The film is being used for food wrapping. Circle No. 20.

Rolling Ball Dispensers

Resina Automatic Machinery Co., Inc. has developed an automatic straight-line conveyor-fed ma-



chine for high speed production line insertion of rolling ball dispensers for roll-on products. DBA ball fitment applicator applies both plastic ball and receptacle fitment through a tandem chute arrangement at rate of 40 to 120 units/min. Delivery and placement of fitment and ball are controlled by container passing through on conveyor. Press-down roller unit assures proper seating of both components. Unit employs straight-line, grip-belt principle making change parts for different size normal containers unnecessary. Circle No. 21.

Stencil Machine

Marsh Stencil Machine Co. announces development of a prototype stencil machine for cutting shipping stencils without an operator by means of a punched tape. Model reads punched tape prepared by a typewriter while order copy is being typed. Each row of hole combinations across the tape represents a coded letter, numeral or space. A reader unit checks hole combinations one line at a time and presents this data to the translator unit which signals stencil machine. Stencil machine then signals reader to read next line and sequence is repeated to complete stencil. Stencils can be one to four lines, cut from roll or sheet stock, custom designed with automatic cut-off upon completion of stencil. System is adaptable for various size stencil machines—¼, ½, ¾ and 1 in. Circle No. 22.

(End)

AVION
CHECKWEIGHING
CONTROLS
field-tested for
SPEED and
ACCURACY

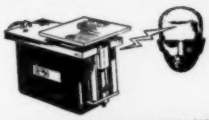
•

RELIABLE
no tubes • rugged

SIMPLE
compact • easy to install

ECONOMICAL
low maintenance

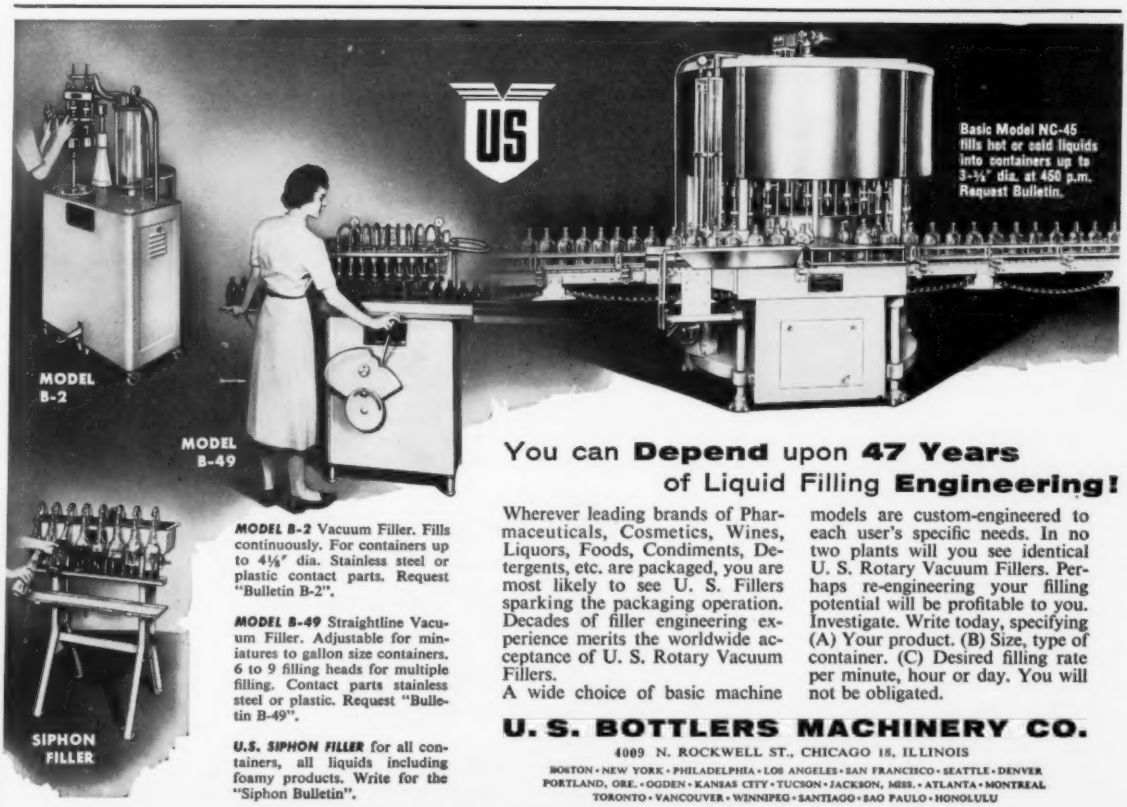
plus
HIGH SPEED ACCURACY!



AVION acf AVION DIVISION
ACF INDUSTRIES INCORPORATED

9 Park Place, Paramus, N.J.

Circle No. 249 on Card, Page 71


US
Basic Model NC-45 fills hot or cold liquids into containers up to 3-½" dia. at 450 p.m. Request Bulletin.
MODEL B-2
MODEL B-49
SIPHON FILLER

MODEL B-2 Vacuum Filler. Fills continuously. For containers up to 4½" dia. Stainless steel or plastic contact parts. Request "Bulletin B-2".

MODEL B-49 Straightline Vacuum Filler. Adjustable for miniatures to gallon size containers. 6 to 9 filling heads for multiple filling. Contact parts stainless steel or plastic. Request "Bulletin B-49".

U.S. SIPHON FILLER for all containers, all liquids including foamy products. Write for the "Siphon Bulletin".

You can **Depend** upon **47 Years** of Liquid Filling **Engineering!**

Wherever leading brands of Pharmaceuticals, Cosmetics, Wines, Liquors, Foods, Condiments, Detergents, etc. are packaged, you are most likely to see U. S. Fillers sparking the packaging operation. Decades of filler engineering experience merits the worldwide acceptance of U. S. Rotary Vacuum Fillers.

A wide choice of basic machine models are custom-engineered to each user's specific needs. In no two plants will you see identical U. S. Rotary Vacuum Fillers. Perhaps re-engineering your filling potential will be profitable to you. Investigate. Write today, specifying (A) Your product. (B) Size, type of container. (C) Desired filling rate per minute, hour or day. You will not be obligated.

U. S. BOTTLERS MACHINERY CO.

4009 N. ROCKWELL ST., CHICAGO 18, ILLINOIS

BOSTON • NEW YORK • PHILADELPHIA • LOS ANGELES • SAN FRANCISCO • SEATTLE • DENVER
PORTLAND, ORE. • OGDEN • KANSAS CITY • TUCSON • JACKSON, MISS. • ATLANTA • MONTREAL
TORONTO • VANCOUVER • WINNIPEG • SANTIAGO • SAO PAULO • HONOLULU

Industry literature available free

1. Beneath each announcement is a code number. As you select items on which you want more information, *note* this number.
2. Now, *circle* the corresponding numbers on the postcard, opposite this page.
3. Next, *fill* in your name and address.
4. Then, *mail* the card — we pay the postage.

Formed Plastic Containers

Plax Corp. has an illustrated folder on its Polyflex formed containers. Polyflex is an extruded polystyrene that is crystal clear, nontoxic, odorless, tasteless, waterproof, greaseproof and resists a range of temperatures from sub-zero to 175° F. Folder illustrates different types of containers and various uses, and includes a chart of properties. Circle No. **101.**

Vibrating Screening-Feeder

Syntron Co. has available a catalog section on its small capacity vibrating screening-feeders for simultaneous screening and feeding of bulk materials ranging in size from 325 mesh to 2 in. Possible applications include dedusting capsules and pills, sizing capsules and pills, separating nuts and shells, peas and beans. Catalog section includes descriptions, data and specifications for five standard sizes. Circle No. **102.**

Gummed Tape Sealer

Better Packages, Inc. has a 4-page illustrated folder on its Better Pack 555, an electric gummed tape sealer with length selector scale ranging from 6 to 36 in. or from 15 to 45 in. It also has a non-measuring hold key for smaller or greater lengths. Unit moistens tape, delivers and cuts all gummed tapes. Circle No. **103.**

Cushioning Material

Blocksom & Co. offers a 4-page illustrated folder on its Paratex, a latex-impregnated curled hair padding. It is available in sheets or rolls and can be molded or die cut. Folder shows several applications. Circle No. **104.**

Plasticity Tester

Testing Machines, Inc. has available a descriptive brochure on its Wallace Rapid Plastimeter which tests plasticity in less than 1 min. Using the modified parallel plate compression principle, a compressive force is applied to the specimen after a "conditioning" period of 10 sec. during which the specimen is brought to a uniform temperature and thickness. Once the sample is inserted, the test is automatic and the plasticity reading remains on the dial until the next specimen is inserted. Specimen cutter is also furnished. Circle No. **105.**

Food Processing Equipment

Horix Manufacturing Co. has available an 8-page brochure giving details on its walking beams and roll-thrus. Walking beams are used for processing fruits, vegetables, jellies, preserves, pickles, and other products. Units can be furnished as coolers, pasteurizer-coolers, and exhaust boxes. Each of these is illustrated and described as to function, construction and capacity. Roll-thru is used for processing food products in cans in a continuous line with slow reversing action. The reversing rotation principle and chain-type container handling with flight bar control are described and illustrated. Circle No. **106.**

Antislip Coatings

E. I. du Pont de Nemours & Co. (Inc.) offers a 4-page illustrated brochure on its Ludox, a colloidal silica coating that, according to Du Pont, makes containers 60 to 70 per cent more slip resistant than untreated containers. Circle No. **107.**

Sleeve For Multiwall Bags

Crown Zellerbach Corp.'s multiwall bag sales division offers information on a sleeve, the Crown cuffed tuck-in-sleeve, for multiwall pasted valve bags. Sleeve is turned back at insert end to provide a double-thickness approximately 1½ in. wide. Circle No. **108.**

Handprinter

Weber Marking Systems, Inc. offers information on its handprinter to be used with a Weber stencil for multiple carton shipment addressing, multiple carton marking of product and content identification, multiple label and tag marking or addressing, reproducing data on forms, envelopes, etc. Printing surfaces range in size from ⅞x2¾ in. to 3x7 in. Circle No. **109.**

Temperature Conversion Chart

Electric Hotpack Co., Inc. offers a copy of its temperature conversion chart for converting Fahrenheit to centigrade, centigrade to Fahrenheit. Also gives interpolation factors for fractional readings. Reverse side of chart gives differences between wet and dry bulb temperatures for fast determination of relative humidity. It is printed on embossed card suitable for mounting on wall near equipment. Circle No. **110.**

Corrugated Packaging Problems

Hoerner Boxes, Inc. offers Case History Booklet No. 2. describing corrugated packaging problems and solutions. Booklet gives actual case histories of corrugated shipping problems involving products ranging from brick and tile to boat motors. Circle No. **111.**

Vacuum Forming

Eastman Chemical Products, Inc. offers a 20-page booklet, "Vacuum forming shapes new markets; new opportunities," which discusses vacuum forming as a technique for producing plastic products and indicates design conditions under which it can be employed. Diagrammatic cross sections show the principle of the basic vacuum-forming process and the drape-forming and plug-assist variations. Preprinting and development of "distortion" patterns are also included. A picture sequence traces the evolution of a vacuum-formed product from the time the extruded, unformed sheet is put into the mold until it emerges in finished condition. Circle No. **112.**

Anti-Statics

Merix Chemical Co. has a 1960 data sheet on its anti-static No. 79 and No. 79-OL. Anti-static No. 79 enables silk-screening on plastics, prevents slippage, improves paint and ink adherence. No. 79-OL shows how polyethylene can be destaticized permanently. Circle No. **113.**

Overload Release Clutch

Centric Clutch Co. offers bulletin No. 304 that illustrates and describes the operation of its Trig-O-Matic overload release clutch. Its trigger action disconnects the load when an overload occurs on the packaging line. When the clutch is reset, the packaging machine resumes operation at the cycle point at which it was released. Circle No. **114.**

Miniaturized Electric Eyes

Photomation, Inc. has available a 16-page booklet describing miniaturized electric-eye applications for counting, sorting, monitoring, assembling and automatic weighing as applied to packaging operations. This equipment ranges from direct or partial cut-off to reflector type units. Booklet contains a section describing specific in-plant installations and also includes numerous schematics of these electronic instruments. Specification data includes dimensions, circuitry, speed, monitoring and relays. Circle No. **115.**

Marking Machinery

Industrial Marking Equipment Co., Inc. offers an 8-page illustrated catalog describing its line of marking, dating, coding and imprinting machines. Descriptions include machines that will imprint any message on virtually any kind of carton, package, box, can, bag, wrapper, or container — also specially-designed machines, such as the Whippet marker for automatic imprinting of conveyor-carried cartons and other containers, and the Flexo-Press which prints multiwall bags or knocked down cartons of any size and handles top and bottom simultaneously. Circle No. **116.**

Wrappability Tester

American Instrument Co., Inc. has published a data sheet describing its pliability tester for measuring wrappability of paper, barrier-materials, cushioning wraps, and so on. A sample cutter, incorporated into the instrument, cuts identical test samples. Circle No. **132.**

Collapsible Tubes

Turner Tube Corp. offers a 10-page, illustrated brochure on its line of collapsible tubes. Topics covered in booklet are: how tubes are made, selection of proper tube metal, tube nomenclature, tube sizes and capacities, special tips and applicators, orifices, caps, decorating, and internal coatings. Circle No. **133.**

Rigid Plastic Boxes

Harkin Affiliates, Inc. has an 8-page, illustrated brochure on its molded stock boxes, clear, tutone or opaque. Pictured are an assortment of standard, specialty and novelty items, hinged and unhinged, round and slide boxes, small and large. Circle No. **134.**

Packaging/Bundling Tapes

Shuford Mills, Inc. offers samples and a folder giving physical characteristics and performance test results on its six different grades of self-sticking tapes for packaging and bundling operations. Circle No. **135.**

Automatic Box Lidder

Charles Beck Machine Corp. has a data sheet describing operating features of its set-up box lidder which automatically places set-up box lids over filled box bases. It is portable and handles box sizes from 1¼x1¼x ¼ in. to 22x14x4½ in. Variable speed drive adjusts for 30 to 300 boxes/min. Circle No. **136.**

Package Caser

The Canning Machinery Div. of Food Machinery & Chemical Corp. offers a 4-page bulletin, No. CMD 601-W, which gives specifications for and pictures of its "Sure-Way" package caser. Machine can load rigid or semirigid packages into a variety of corrugated case sizes, either top or end loading, at speeds up to 240 pkgs./min. Circle No. **137.**

Liquid Fillers

Popper & Sons, Inc. offers bulletin #659F, "Distinctive packages require the right filling equipment," illustrating and describing its variety of filler models. Speeds range up to 240 containers/min.; fills from 1 to 360 cc.; handles plastic and glass containers. Circle No. **138.**

Water-Vapor Permeability Cups

Thwing-Albert Instrument Co. offers a 4-page leaflet, 401-WVP, on its mechanical and wax seal water vapor permeability cups. Information is given on water vapor permeability testing and application of "Vapometer" mechanical seal cups and wax seal dishes for water vapor permeability test. Circle No. **139.**

Cushioned-Insulated Shipping Bags

Columbian Rope Co. has literature on its "Jet-Pak" cushioned bag which includes a description of the bag's construction, how to use them, and a list of the 14 available sizes. They have been used to ship products such as books, machine and electronic parts, precision instruments, sporting goods, frozen foods. Circle No. **140.**

Table-Top Chain Conveyor/Turntable

Conveyor Specialty Co. has information sheets, including detailed mechanical drawings, on its table-top chain conveyor (series TC) and turntables used in conjunction with conveyor. Chains are available in many widths from 3¼ to 7½ in. Standard units are driven at a minimum of 20 and a maximum of 80 ft./min. Circle No. **141.**

Flexible Packaging

Bagcraft Corp. of America has a 4-page brochure describing advantages offered by Bagcraft packaging for products ranging from meat, ice cream bars, to drinking glasses, bakery products and shirts. Circle No. **142.**

Blister Packaging

The Walter Frank Organization has released a pamphlet on blister packaging discussing the pro's and con's of various materials and methods that can be used to make this type of package. Circle No. **143.**

Laminated Paper

Cromwell Paper Co. offers a brochure describing two of its laminated papers — "Flex-Fibre" and "Flex-Lam." Designed to combine sufficient flexibility for paper to conform to package, plus extra

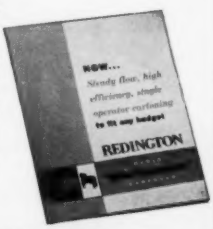
Carton 40-60 Units Per Minute—with just one operator—at LOW MACHINE COST

Just one compact, efficient machine—with just one operator—will handle almost any product you package in reverse tuck folding cartons, at the rate of 10,000, 15,000, 18,000 packages per day. Yet, installed and turning out steady production, costs less than $5000!

REDINGTON automax® CYCLE CARTONER

feeds and forms cartons, places them in conveyor pockets. One operator places the item to be cartoned in each of the three loading troughs, then pushes slide forward and back. AUTOMAX tucks in end flaps, discharges finished packages, restarts the cycle—*all automatically!*

Solidly built for long, trouble-free service, AUTOMAX is just 70" long, 30" wide, weighs only 750 lbs. It's caster-mounted—move it anywhere in the plant you need it, even where floor space is limited. Perfect for tubes, bottles, toys, parts, hardware—whatever you carton. *Adjustable.*



★ *Write for illustrated folder giving full details about AUTOMAX—priced to fit your budget.*

F. B. REDINGTON CO.
3022 ST. CHARLES ROAD, BELLWOOD, ILLINOIS
Chicago Phone: AUstin 7-4200 • Verona, N. J., CEnter 9-4608

QUALITY CONTROL

Testing Machines for
- RESEARCH
- DEVELOPMENT
- QUALITY CONTROL

ISN'T IT TRUE?

The technical man well knows that the prudent selection of a quality control test helps maintain high product standards and eliminate costly rejections.

- Manufacturers
- Distributors
- Custom Designing
- Repair
- Calibration

1079 Testing Machines available from TMI. Ask for our New 224 Page Catalog and Register of Testing Machines.

tmi TESTING MACHINES, INC.
72 Jericho Turnpike, Mineola, New York, U.S.A.
"Our Forty-second Year"

strength, both papers are reinforced with glass fibers. Circle No. **144.**

Pressure-Sensitive Products

Coated Products Co. has available sales aid and price list jacket with samples and specifications of its "Stixie" line of pressure-sensitive products. Circle No. **145.**

Liquid Filling Machines

MRM Co., Inc. offers a 4-page brochure describing its semiautomatic vacuum and gravity liquid filling machines. Fillers handle thin, viscous and foaming liquids in conveyor type or individual station production lines. Units fill from fractional ounce through gallon sizes. Circle No. **146.**

Urea Molding Compounds

American Cyanamid Co., plastics and resins division, has available technical data on its Bettle urea molding compounds — urea formaldehyde resin and highly refined alpha cellulose. This 5-page report outlines many properties of the resin including ASTM, Federal and its own tests of physical, electrical and chemical properties. Circle No. **147.**

Stretchable Paper

Clupak, Inc. offers a folder outlining the advantages of Clupak, a stretchable paper. Also included are some of the current applications, and a description of how the stretchability is built in. Circle No. **148.**

Table-Top Chain Conveyor

Conveyor Specialty Co. has information sheets, including detailed mechanical drawings, on its table top chain conveyor (series TC) and turntables used in conjunction with the conveyor. Chains are available in many widths from 3¼ to 7½ in. Standard units are driven at a minimum of 20 and a maximum of 80 ft./min. Circle No. **149.**

Cushioned-Insulated Shipping Bags

Columbian Rope Co. has literature on its Jet-Pak cushioned bag. Included is a description of their construction, how to use them, and a list of the 14 available sizes. Jet-Pak has been used in shipping a number of products such as: books, machine and electronic parts, precision instruments, sporting goods, frozen food. Circle No. **150.**

Fibre Cans

Cleveland Container Co. offers a 4-page illustrated packaging brochure that outlines a variety of shapes and sizes of its fibre cans and specialty closures. Bulletin also lists numerous moisture, grease resistant and anticorrosive liners as well as labels and wrappers that are available to users of these cans. Circle No. **151.**

Variable Sheeter

Wilcar Corp. offers a 12-page illustrated booklet on the Wrap-O-Matic automatic variable sheeter. It will feed and automatically cut paper, polyethylene, single-face corrugated, foil, cellophane or most any material that is to be converted from a roll to sheets of various sizes. Unit offers a choice of four preset lengths and a fifth "incher" button will deliver a continuous feed when odd lengths are needed. Automatic repeat unit delivers the same size sheet continuously. Specifications are included. Circle No. **152.**

Protective Packaging Material

Vanant Co. offers a 4-page folder on its Sus-Rap, a preformed fibreboard wrap around packaging material. Folder shows many applications, including such products as TV and radio sets, mirrors, clocks and instruments, marble, and window and plate glass. Circle No. **153.**

Coding Equipment

Kiwi Coders Corp. offers a 4-page illustrated folder on nine models of its coding equipment. Coders mark such items as bread, ice cream cartons, shipping containers, multiwall bags, and so on. Circle No. **154.**

Polyethylene Resin

E. I. du Pont de Nemours & Co., Inc. offers two booklets on its Alathon polyethylene resin. One deals with extrusion coating and has a chart listing the different types of Alathon, their density, melt index, properties and uses. It also has a property selector chart which is a graphic generalization of the effect of melt index vis-a-vis density on the processing characteristics of conventional polyethylene. The second booklet notes some 24 polyethylene applications of Alathon. Circle No. **155.**

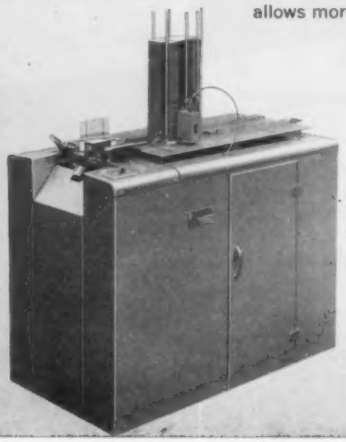
Teflon Coating

Cadillac Plastic & Chemical Co. offers a 4-page folder describing properties and applications for Teflon coating of metal and ceramic tools and parts to contribute anti-

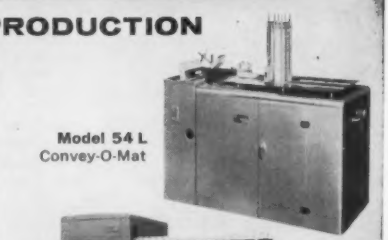
TUCK-O-MAT LINE *by...* **BIVANS**

FOR SHORT RUNS OR CONTINUOUS PRODUCTION

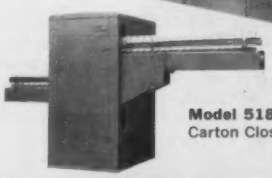
The TUCK-O-MAT Model 50 is a reliable, general purpose carton set-up machine... a real workhorse of the cartoning line. Hundreds of installations prove that it offers more versatility, handles a wider range of carton sizes, allows more adaptations... all at speeds up to 75 cartons per minute.



BIVANS will out-perform, out-last any comparable equipment on the market today. Write today for complete details or a demonstration.



Model 54 L
Convey-O-Mat



Model 518 L
Carton Closer

Call our distributor today to see a Bivans installation near your own plant.

BIVANS CORPORATION

2431 Dallas Street, Los Angeles 31, California

Distributed by: New Jersey Machine Corp., Hoboken, Cincinnati, Chicago, Los Angeles

sticking or chemically resistant properties. Typical applications are illustrated. The process and limitations of the coating technique are described, and properties of Teflon in solid and in coating form are compared. Circle No. **156.**

Bottle And Can Packer

Emhart Manufacturing Co. offers a single-page bulletin on its Standard-Knapp 860-AA bottle and can packer which features in-line case feed. Data includes general description, operational details, floor plan and specifications. Circle No. **157.**

Versatile Wrapper

Package Machinery Co. has a bulletin describing its model Universal 6 wrapping machine. Featuring a self-measuring paper feed which cuts off the correct amount of wrapping material for each item, this machine can produce up to 40 pkgs. /min. This machine wraps goods on flat cards, trays, or in cartons within the range of—4 to 16 in. long, 2 to 9½ in. wide, ⅝ to 5¼ in. high. Circle No. **158.**

Gummed Tape Measurer

Hudson Pulp & Paper Co. offers a visual aid for measurement of gummed tape in sealing different sizes and types of containers. Wall-size (17x22 in.), the Econo-Chart is planned for posting in the packing room preferably as near the sealing operation as possible. According to Hudson, consistent use of the chart will help speed packaging and will materially cut tape wastage. Types of packages covered are fibre drums, piece goods wraps, folding boxes, overlap flap cartons, telescope cartons and regular slotted cartons. Operator measures package for width, length, height or diameter, as the case may be. With dimensions set, he then checks Econo-Chart to find how much tape is required. Circle No. **159.**

Adhesives Extruder

Potdevin Machine Co. offers a 2-page illustrated brochure on its model SE hot melt adhesives extruder. Machine can be affixed to most standard carton and bag making machines and permits use of dry, granular adhesives in production lines. Granules are reduced to a molten state and applied where needed. Circle No. **160.**

Packaging Hints

Mid-States Gummed Paper Div., Minnesota Mining and Manufacturing Co., has available two brochures entitled "Packagineering." They include suggestions for loading, handling and closure of cartons, outline of basic requirements for operation of a packaging station for both the large and small user. Advantages of various types of available tapes for closure are covered. Circle No. **161.**

Packaging Machinery Heating Units

Vulcan Electric Co. has a 34-page catalog on its complete line of electric heating units, glue, and wax melting pots. Units are manufactured for heating applications in packaging and sealing equipment. Circle No. **162.**

Polypropylene Film

AviSun Corp. offers a preliminary technical data bulletin on its polypropylene film. Characteristics and properties are listed. Circle No. **163.**

Electric Temperature Controls

Fenwal, Inc. offers a 4-page bulletin describing and giving specifications for many of its differential expansion Thermoswitch controls which cover a range of temperatures. Standard size, midget, miniature, and snap-on switches are included; and electronic, mechanical and thermistor indicating controllers are discussed. Circle No. **164.**

Confectionery Packaging

American Viscose Corp.'s film division offers a guide, "Confectionery packaging recommendations." It recommends Avisco cellophane types for packaging a variety of candy as well as candy-coated chewing gum, nuts and popcorn, and types best suited for direct wraps, for carton or tray wraps and for bags or pillow pouches. Circle No. **165.**

Printing Machines

Cosom Engineering Corp. has literature on two of its printers, the Letter Press and the Flexographic models. Both feature gear-driven printing towers, said to assure accurate register. The Flexographic model is equipped with special fountains and a circulating ink pumping system which continually agitates the ink supply. Both units can print on three different levels with up to three different ink colors simultaneously. Circle No. **166.**

Steel Strapping And Accessories

Stanley Steel Strapping, Div. of Stanley Works, has a 16-page illustrated catalog giving specifications for its entire line of steel strapping, strapping seals, strapping tools, corner protectors, and accessories. Circle No. **167.** (End)

NEW! Portable Electric Bag Closing Machine

HERE is a handy little machine that makes bag closing fast, easy, and economical. It is recommended where operations are limited or intermittent and do not justify installation of large, high production machines.

LIGHTWEIGHT—9½ pounds. Carry it anywhere. No installation; requires only an electrical outlet.

POWERFUL—Direct drive motor with thumb control button. Exclusive top and bottom feed for greater power and production.

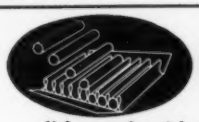
VERSATILE—Closes bags made of cotton, burlap, jute, multiwall paper, laminated paper.

SAFE—Anyone can operate it. No special training required. Comes with shoulder strap or can be obtained with overhead suspension. Send for descriptive literature.

Union Special® **MACHINE COMPANY**

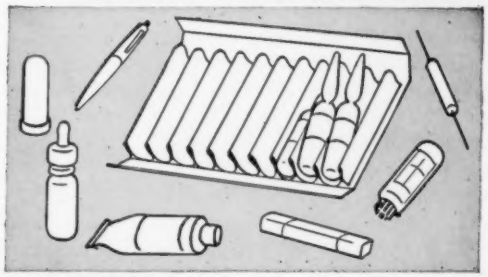
Originator of Filled Bag Closing Machines

487 North Franklin Street Chicago 10, Illinois



RONDO®

"the pack with the built-in shock absorber"



WHAT RONDO IS:

A packing system comprised of trays with fluted partitions which hold inserted articles by a spring-clip action.

WHAT RONDO DOES:

PROTECTS small delicate objects against shock and breakage while transporting, because they are suspended in a cushion of air. (medical vials and tubes, electronic components, etc.)

FACILITATES handling, not only in production, storage, inventory, and shipment, but also at the receiving end. This also applies to less fragile products. (cosmetic containers, watch cases, tools, etc.)

COMBINES safety, full visibility and economy from the production line to the point-of-sale display. (pens, crayons, artists' colors, etc.)

RONDO IS A PAPER PRODUCT, SOLD AT PAPER PRICES

Holds objects from 5/16" to 1¼" in diameter

Rondo Process and Designs Patented in All Major Countries

RONDO of AMERICA, Incorporated

100P Sanford Street • Hamden 14, Conn.

Structural design notes for corrugated containers

Note No. 12: Compressive strength of boxes—Part II

By K. Q. Kellicutt, *Engineer, Forest Products Laboratory, Forest Service, U. S. Department of Agriculture, Madison, Wisconsin*

Introduction. Three unbonded sheets of paperboard shaped into the form of a box would provide little resistance to a compressive force applied in any of the three principal directions. By proper arrangement, however, and providing there is an adequate bond between the sheets, a structural material results that has tremendous strength per unit of weight.

The importance of proper arrangement has been discussed previously in relation to flute size and moment of inertia (3). The necessity of attaining an adequate bond between the paperboard components of the corrugated structure was pointed out in the previous note (2). The effect of inadequate bonding is the subject of this note.

Corrugating Adhesives

Prior to 1935, silicate of soda was the primary adhesive used in the manufacture of corrugated shipping containers. During the subsequent four or five years, considerable development work was done with starch adhesives that made it possible to use them also in the manufacture of corrugated board. From the early 1940's onward, there has been a steady increase in the use of starch adhesives.

With the development of the weatherproof boards during World War II, there was a need for a water-resistant adhesive for making these new boxes. One such adhesive developed was a starch-urea - formaldehyde combination that proved to be satisfactory for use with the weatherproof boards. Since that time, there has been continuous development work with formulations of both starch and silicate of soda.

Advantages and disadvantages can be cited for both general kinds of adhesives, but generally a good bond can be attained on the corrugator with both kinds.

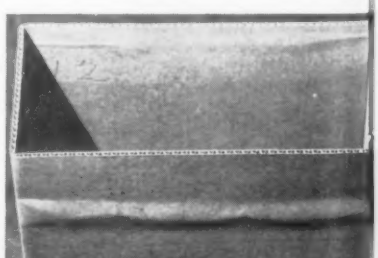
Essentially, a good bond depends upon sufficient adhesives being applied at the tip of the flutes to form small fillets between them and the liner. The fillet serves as a means of distributing stresses over a greater area of the flute, and thus increases the efficiency of the bond. Secondly, the adhesive must be such that it penetrates into the liners and the corrugating medium to the extent that failures which do result are fiber failures rather than adhesive failures. If this condition could always be insured, all the inherent strength of the paperboards could be developed in the structural corrugated material. But glue skips do sometimes occur, for various reasons, as do areas of thin adhesive at the corrugator finger lines.

Effect Of Faulty Bonds

When a faulty bond occurs in a corrugated board, the structure made from the board—a tube or a box—is likely to be weakened. Its resistance to compressive forces may be reduced by as much as 50 per cent. The extent of reduction is, of course, dependent upon where the faulty bond is located in the structure. For example, a glue skip located in the flaps of a box would cause little if any reduction in top-to-bottom compressive strength. But, should the skip be located in one of the four side panels of the structure, appreciable reductions in compressive strength are likely to result.

For example, in studying the buckling pattern of tubes at the FPL, one A-flute board had a poor bond between the corrugations and the double-back liner, as well as a few rather wide areas of thin adhesive along some finger lines. These defects became very apparent in tests of tubes made from the board.

In one group of tests of tubes 16 in. long, 8 in. wide, and 12 in. high, the average top-to-bottom



1 BUCKLE OF DOUBLE-BACK LINER on front face of A-flute tube; also finger-line buckle on inside of back face. Defects, caused by poor bonding, resulted in 794-lb. load—only 55% of that for nondefective tubes.

2 GLUE SKIP OF CENTER BOX caused buckle of liner about 2 in. from top. As a result, box attained a compression test load of about 200 lb. below the average of the other two.

load was established as 1,400 lb. Those tubes in the group with defects were as much as 45 per cent below the average. One such tube is shown in Fig. 1. This tube had a wide glue skip on the double-back side of the board, that may be seen as a bulge in the liner, while, on the single-face side, a finger-line buckle may be seen about 1 in. from the top edge of the tube. The actual load attained with this tube was 794 lb.

In compression tests of boxes made from the same board, the faulty double-back bond became apparent when it was located in the side walls of the box. An example of this is shown by the center box of the three shown in Fig. 2. Here it may be seen that the center box had a glue skip on the double-back side (outside) that extends horizontally across the front face. The top-to-bottom load attained by this box was about 200 lb. below the average attained by the other two.

In compression tests of commercially made boxes, faulty bonds are easily detected. An example of poor gluing of one such box is shown in Fig. 3. This box attained a top-to-bottom test load of 371 lb. while it should have attained a load of about 700 lb. The reason for the low value became apparent when boxes from the lot were inspected. It was revealed that the single-face bond was poor, and the liner could be pulled from the corrugated section with ease and with almost no fiber failure. A few spotty fiber failures could be found on the double-back liner, but the bond was not adequate.

What Can Be Done About Poor Bonds?

With the continual research on adhesives, the technology of bonding has been advanced by the adhesive manufacturers who work closely with the corrugated box manufacturers. With the steady increase in the speed of fabricating corrugated boxes, however, the problem of attaining a good bond in the split second that it takes the board to pass through the corrugator becomes more complex.

In view of the importance of attaining a good bond between the paperboard components, **quality inspection checks should be made by the users of the boxes, and when bonds are inadequate, this fact should be called to the attention of the supplier.**

One simple test that quite effectively reveals poor bonding is the short column crush test (*1*).

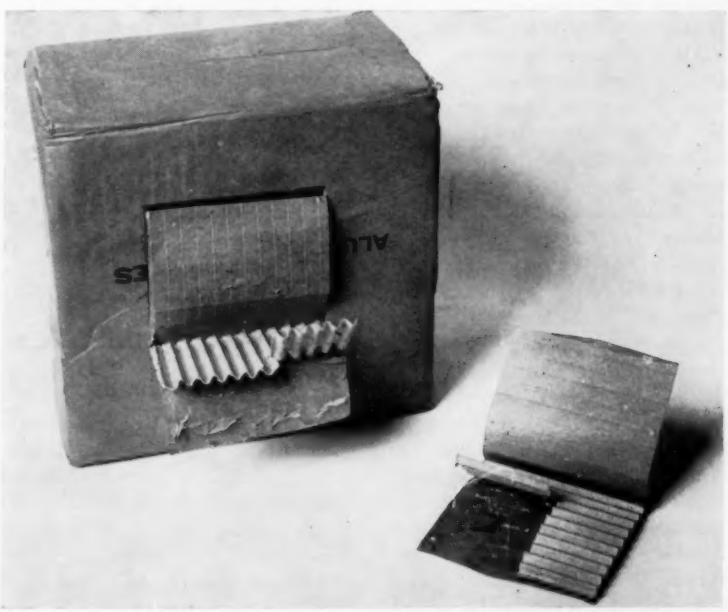
Literature Cited

(1) Kellicutt, K. Q., "Note No. 8: Short-column crush test of corrugated board and its use in quality control," PACKAGE ENGINEERING 4 (1959), No. 9 (September), p. 92.

(2) ——, "Note No. 11: Compressive strength of boxes — Part I," PACKAGE ENGINEERING 4 (1959), No. 12 (December), p. 88.

(3) Kellicutt, K. Q. and Peters, C. C., "Note No. 7: Relationship of moment of inertia to stiffness of corrugated board," PACKAGE ENGINEERING 4 (1959), No. 8 (August), p. 84.

(*End*)



3 BOX HAS POOR BOND on single-face side of board (inside), shown by relatively clean glue lines of cut section in side of box. Section cut from opposite side of box (front foreground) shows only small areas of fiber failure on double-back liner (dark, flat portion). Box supported only 371 lb. in compression, whereas it should have attained approximately 700 lb.

Structural design notes for corrugated containers

Note No. 12: Compressive strength of boxes—Part II

By K. Q. Kellicutt, *Engineer, Forest Products Laboratory, Forest Service, U. S. Department of Agriculture, Madison, Wisconsin*

Introduction. Three unbonded sheets of paperboard shaped into the form of a box would provide little resistance to a compressive force applied in any of the three principal directions. By proper arrangement, however, and providing there is an adequate bond between the sheets, a structural material results that has tremendous strength per unit of weight.

The importance of proper arrangement has been discussed previously in relation to flute size and moment of inertia (3). The necessity of attaining an adequate bond between the paperboard components of the corrugated structure was pointed out in the previous note (2). The effect of inadequate bonding is the subject of this note.

Corrugating Adhesives

Prior to 1935, silicate of soda was the primary adhesive used in the manufacture of corrugated shipping containers. During the subsequent four or five years, considerable development work was done with starch adhesives that made it possible to use them also in the manufacture of corrugated board. From the early 1940's onward, there has been a steady increase in the use of starch adhesives.

With the development of the weatherproof boards during World War II, there was a need for a water-resistant adhesive for making these new boxes. One such adhesive developed was a starch-urea - formaldehyde combination that proved to be satisfactory for use with the weatherproof boards. Since that time, there has been continuous development work with formulations of both starch and silicate of soda.

Advantages and disadvantages can be cited for both general kinds of adhesives, but generally a good bond can be attained on the corrugator with both kinds.

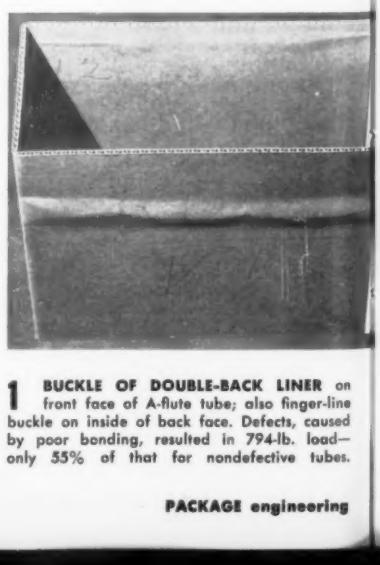
Essentially, a good bond depends upon sufficient adhesives being applied at the tip of the flutes to form small fillets between them and the liner. The fillet serves as a means of distributing stresses over a greater area of the flute, and thus increases the efficiency of the bond. Secondly, the adhesive must be such that it penetrates into the liners and the corrugating medium to the extent that failures which do result are fiber failures rather than adhesive failures. If this condition could always be insured, all the inherent strength of the paperboards could be developed in the structural corrugated material. But glue skips do sometimes occur, for various reasons, as do areas of thin adhesive at the corrugator finger lines.

Effect Of Faulty Bonds

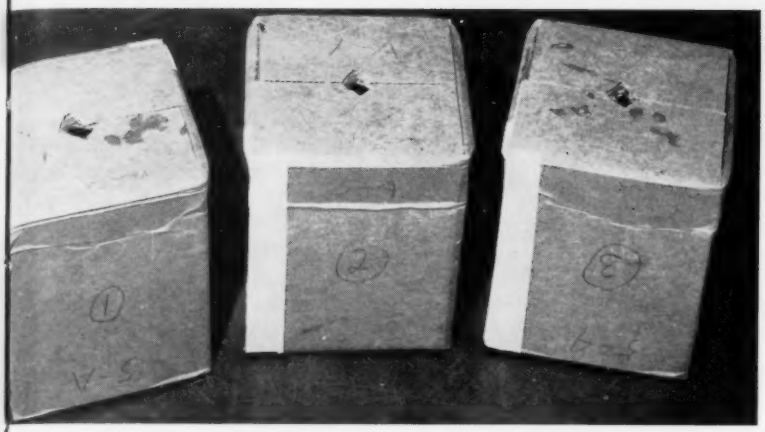
When a faulty bond occurs in a corrugated board, the structure made from the board—a tube or a box—is likely to be weakened. Its resistance to compressive forces may be reduced by as much as 50 per cent. The extent of reduction is, of course, dependent upon where the faulty bond is located in the structure. For example, a glue skip located in the flaps of a box would cause little if any reduction in top-to-bottom compressive strength. But, should the skip be located in one of the four side panels of the structure, appreciable reductions in compressive strength are likely to result.

For example, in studying the buckling pattern of tubes at the FPL, one A-flute board had a poor bond between the corrugations and the double-back liner, as well as a few rather wide areas of thin adhesive along some finger lines. These defects became very apparent in tests of tubes made from the board.

In one group of tests of tubes 16 in. long, 8 in. wide, and 12 in. high, the average top-to-bottom



1 BUCKLE OF DOUBLE-BACK LINER on front face of A-flute tube; also finger-line buckle on inside of back face. Defects, caused by poor bonding, resulted in 794-lb. load—only 55% of that for nondefective tubes.



2 GLUE SKIP OF CENTER BOX caused buckle of liner about 2 in. from top. As a result, box attained a compression test load of about 200 lb. below the average of the other two.

load was established as 1,400 lb. Those tubes in the group with defects were as much as 45 per cent below the average. One such tube is shown in Fig. 1. This tube had a wide glue skip on the double-back side of the board, that may be seen as a bulge in the liner, while, on the single-face side, a finger-line buckle may be seen about 1 in. from the top edge of the tube. The actual load attained with this tube was 794 lb.

In compression tests of boxes made from the same board, the faulty double-back bond became apparent when it was located in the side walls of the box. An example of this is shown by the center box of the three shown in Fig. 2. Here it may be seen that the center box had a glue skip on the double-back side (outside) that extends horizontally across the front face. The top-to-bottom load attained by this box was about 200 lb. below the average attained by the other two.

In compression tests of commercially made boxes, faulty bonds are easily detected. An example of poor gluing of one such box is shown in Fig. 3. This box attained a top-to-bottom test load of 371 lb. while it should have attained a load of about 700 lb. The reason for the low value became apparent when boxes from the lot were inspected. It was revealed that the single-face bond was poor, and the liner could be pulled from the corrugated section with ease and with almost no fiber failure. A few spotty fiber failures could be found on the double-back liner, but the bond was not adequate.

What Can Be Done About Poor Bonds?

With the continual research on adhesives, the technology of bonding has been advanced by the adhesive manufacturers who work closely with the corrugated box manufacturers. With the steady increase in the speed of fabricating corrugated boxes, however, the problem of attaining a good bond in the split second that it takes the board to pass through the corrugator becomes more complex.

In view of the importance of attaining a good bond between the paperboard components, **quality inspection checks should be made by the users of the boxes, and when bonds are inadequate, this fact should be called to the attention of the supplier.**

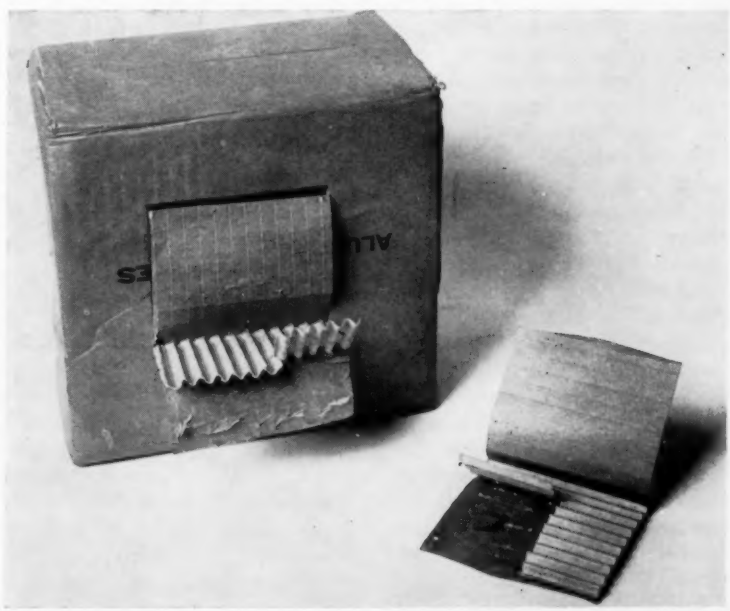
One simple test that quite effectively reveals poor bonding is the short column crush test (*1*).

Literature Cited

(1) Kellicutt, K. Q., "Note No. 8: Short-column crush test of corrugated board and its use in quality control," PACKAGE ENGINEERING 4 (1959), No. 9 (September), p. 92.

(2) ——, "Note No. 11: Compressive strength of boxes — Part I," PACKAGE ENGINEERING 4 (1959), No. 12 (December), p. 88.

(3) Kellicutt, K. Q. and Peters, C. C., "Note No. 7: Relationship of moment of inertia to stiffness of corrugated board," PACKAGE ENGINEERING 4 (1959), No. 8 (August), p. 84. *(End)*



3 BOX HAS POOR BOND on single-face side of board (inside), shown by relatively clean glue lines of cut section in side of box. Section cut from opposite side of box (front foreground) shows only small areas of fiber failure on double-back liner (dark, flat portion). Box supported only 371 lb. in compression, whereas it should have attained approximately 700 lb.

Folding carton performance

(*Continued from Page 61*)

are important and deserve very close checking. For example, there should be no cracking of the top liner or along the score line.

Inks And Color

Inks and color deserve careful attention from a functional point of view, quite apart from esthetic considerations not germane to this series. Much of the problem in this area focuses on the maintenance of color control at the carton plant.

In relation to board and its use, a major consideration is that the inks anticipated for a given carton should be tested with sheets of the board to be used—in advance! This relates closely to the question of board surfaces and coatings. For example, the same ink gives different performance on board with different coatings or surface conditions—and should not be overlooked in the carton stock evaluation process.

Caliper Variation

A perennial problem of folding carton users is that of caliper variation in the board. The variation relates to effectiveness of scoring, bending, prebreaking, and performance on the packaging line. Additional difficulties show up when the caliper varies to where the stock gets too thin for a particular carton. This results in a bowing of the board at the forming machinery on the packaging line. Frequently it becomes impossible to get good carton set-up and good glue bonds with board too thin.

Some experts among carton manufacturers insist that caliper variation is a problem primarily for the board mills and carton makers to resolve. They assert it should be of little interest to package users. However, many users debate this view and contend that caliper variation is very much a problem concerning them.

Just what is a reasonable caliper variation is a question. Further, users and suppliers alike say that board mills are doing better than they used to in holding this down. For example, one user comments that its cartons used to have a four-point variation, but that currently, the board mills furnishing stock for their cartons are able to hold caliper variations within 1 point on calipers under 0.020 in.; within 2 points for 0.020 to 0.030-in.

Surface Coatings

Surface of a given board has a number of implications for carton users, over and above printability and appearance. Some users point out that, in operations involving manual and semi-automatic filling, a smooth surface of the board improves the entire operation. The carton is easier on the workers' hands and is easier to handle. This means easier stacking and removal from stacks, positioning for filling, sliding in product, and handling filled cartons.

Many coatings relate to functional properties, for example, water vapor protection, grease resistance, rust resistance, among others. The point is that, when a user spells out the details of board for carton stock, it is vital to consider the need for, or effect of, surface coatings in relation to the product to be packaged.

A major point for a user to keep in mind is that, when working out board details with a carton supplier, it is important to relate the specific aspects of carton performance and functional properties to the board being selected. There is more to it than merely using a checklist of caliper, bending properties, basis weight, and similar physical units of measurement.

Freedom From Taste, Odor And Toxicity

A major requirement of folding cartons employed in food packaging is that they must not impart toxicity or transfer undesirable taste and/or odor to the product. Conversely, the board must not leach out flavors from the product or develop off-odors of its own. Though comparatively rare, the most troublesome, and frequently the most costly, complaints a supplier can suffer are those arising from contamination of product by the package. Hence, both board mill and carton plant must operate a clean shop, and exercise care of what goes into and onto the board —board-making chemicals and additives, inks, varnishes, coatings, and adhesives.

Since it is impossible to spell out in an article all of the considerations, it is necessary to generalize: Carton manufacturers and package users stress the importance of knowing the results desired and being able to articulately interpret these to a carton manufacturer. Unless the carton manufacturer knows these points (which only the user can furnish), it cannot furnish satisfactory cartons to meet the stated performance requirements.

(Next article in this series will look at manufacturing factors within the carton plant, that affect carton performance, with special attention to scores and scoring.)

CLASSIFIED ADVERTISING

Rates: $30.00 per column inch or fraction thereof. If boxed, add $30.00.
Copy: Figure 40 characters per line, 9 lines per inch. Include reply address.
Terms: Cash with order.

USED EQUIPMENT FOR SALE

Surplus Bottling & Processing Machinery

1 Capen 4 Spindler Capper—Set up for 28 mm. Caps, but have change parts for 24 mm. Caps: last used on 32 oz. stubby bottles. It is equipped with 3/4 h.p.—60 cycle —3 phase—220/440 motor. There is no serial number. The general condition is good. Type "C". $1,750.00

1 Manton Gaulin Homogenizer—Stainless Steel: It was only used approximately two weeks. Purchased new in September, 1956 for $3,300.00; Type J-25; Model #4030. $2,500.00

1 O&J Automatic Crowner—Model #40: Rotates counter clockwise. Has 8 heads. Enter left hand rear of machine and exits front to right. $1,500.00

1 Automatic 30 spout U. S. Bottling Filler, complete with vacuum. Rotary vacuum type; the contact parts are Tygon; the spouts are Lucite; the model is N.C.30; Serial #618; last used on 32 oz. stubby bottles; Not stainless steel; complete with motor; general condition is good. Asking price includes vacuum. $2,000.00

1 Oslund Automatic Spot Labeler—Serial #426RH. $1,500.00

Reply to Box 1604, **PACKAGE ENGINEERING.**

POSITIONS AVAILABLE

Packaging Engineer

with Degree in food technology or package engineering with a minimum of 5 years experience in flexible packaging field. Thorough knowledge of various raw materials and machinery used in flexible packaging essential with some knowledge of foil converting field.

Kaiser Aluminum & Chemical Sales
Mr. A. J. Castle
6615 W. Irving Park
Chicago 34, Ill.
Avenue 2-3700

Packaging Equipment Designer

Expanding Equipment Division of international corporation seeks qualified designer to produce packaging equipment of original design using unusual characteristics of flexible films developed by parent company.

Must incorporate new concepts of film handling, heat sealing, heat shrinking into sound machine design for low volume production at competitive cost. Must have creative ideas for packaging labor cost savings from simple hand wrap operations to complex automatic machinery.

Education and experience should allow candidate to receive full responsibility for projects from initial specifications to final production design under supervision of Chief Designer. Engineering knowledge should cover mechanical design, electrical controls, heat sources, temperature controls. College degree preferred. New England location. Write to Box 1601, **PACKAGE ENGINEERING.**

Research and Development Man

Mechanical Engineering background—Industry experience helpful but not essential—New York Metropolitan area Corrugated Container Manufacturer—Excellent opportunity for forceful, creative individual. Send resume to Box 1602, **PACKAGE ENGINEERING.**

Wanted

Experienced man to head Research and Development in film converting and printing company. Progressive, growing company with excellent working conditions and good location for schools, climate, recreational facilities, housing, etc. Package Products Co., Box 1888, Charlotte, N. C.

Manufacturing Administrator

An outstanding career opportunity as an administrator of operations at a plant in the southern area. The Requirements:

1. The ability to coordinate the operations of various manufacturing and administrative functions of the plant and other facilities, such as, quality control, systems and procedures, production control, purchasing, cost accounting, etc.

2. A minimum of 10 years experience in the areas of manufacturing, with at least 5 years in manufacturing management.

Please forward resume of personal history, experience and salary requirements to Box 1603, **PACKAGE ENGINEERING.**

Package Development Engineer

For leading consumer goods manufacturer N.Y.C.

Must have M.E. Degree and experience in setting up specifications and blueprints, preferably on small brass or jewelry-type products. Salary $15,000—$20,000. Send resume in confidence to:

R. A. Huttemeyer
Thorndike Deland Associates
1440 Broadway
New York 18, New York

Index of Advertisers

A-B-C Packaging Machine Corp. 68
ACF Industries, Inc., Avion Div. 69
Bartelt Engineering Co. 16
Battle Creek Packaging Machines, Inc. 58
Bemis Bro. Bag Co. 7
Bivans Corporation 74
W. J. Bradford Paper Co. 65
Cel-Fibe Div., Personal Products Corp. 63
Connecticut Hard Rubber Co. 61
Container Corporation of America 11
Darling & Company 65
Dobeckmun Co., Div. of The Dow Chemical Co. 20
Electronic Processes Corp. of California 44
Ellis & Sons, Inc., Geo. D. 56
Emhart Mfg. Co., Portland Div. 19
Ferguson, Co., J. L. 45
Food Machinery & Chemical Corp., Canning Machinery Div. 12
Fox Co., The John P. 61
Frazier & Son 51
Fry Company, George H. 68
General Corrugated Machinery Co., Inc. 64
Goodyear Tire & Rubber Co., The 3
Gump Co., B. F. 65
Hinde & Dauch 24
Jiffy Manufacturing Co. 22
Jones & Co., R. A. ..... **back cover**
Keyes Fibre Co. 15
Kimberly-Clark Corporation 17, 18
Kraft Bag Corp. 1
L. A. B. Corporation 59
Labelette Company 56
Markem Machine Co. 14
Marsh Stencil Machine Co. 61
Mid-States Gummed Paper Div., Minnesota Mining & Mfg. Co. 8
Mid-States Steel & Wire Co. 66
Miller Hydro Co. 67
Monsanto Chemical Co., Plastics Div. ..... **inside back cover**
Morningstar-Paisley, Inc. 5
National Starch & Chemical Corp. 60
Package Machinery Co. 23
Packaging Corporation of America 47
Paterson Parchment Paper Co. 10
Personal Products Corp., Cel-Fibe Div. 63
Pfaudler Permutit, Inc., The Pfaudler Div. 43
Plax Corporation 39-42
Redington Co., F. B. 73
Rhinelander Paper Co. 13
Riegel Paper Corp. 35
Rondo of America, Inc. 75
Scandia Packaging Machinery Co. ..... **inside front cover**
Seneca Wire & Mfg. Co. 44
Syntron Company 46
Testing Machines, Inc. 73
Thilmany Pulp & Paper Co. 57
Union Special Machine Co. 75
United Shoe Machinery Corp. 21
U. S. Bottlers Machinery Co. 69
U. S. Industrial Chemicals Co. 9
Weigh Right Automatic Scale Co. 59

What we think

Packaging people must fight off creeping socialistic regulation

Where would your company be if management could not raise or lower the prices of products you package without lengthy hearings before some tribunal? What would happen to your plant efficiency if "full crew" laws dictated the number of workers you could assign to a line? How could you capitalize on research resourcefulness with an outside authority restricting your choice of materials, say, for laminations?

Much mischief has already been done

These questions point up a deadly trend toward increasing governmental regulation. The examples are not far-fetched. The first two have long plagued our railroads. The third is already finding its way into the packaging field.

If anyone says we shouldn't compare railroads and packaging, we remind them that even in the face of well-documented complaints about railroads, the basic problem is not the railroads themselves but rather, what is being done to them. This is what inhibits their self-improvement. They are taxed in every county through which their lines run. They use their own money to keep up their roadbeds and rolling stock. Their tax money helps subsidize competing forms of transportation. Regulatory bodies dictate their pricing policies. For good measure, some state legislatures impose "full crew" laws on them, thus limiting their operating efficiency.

No professional packaging man can bury himself in his specialty and dismiss government regulation as something for his lawyers and top management to worry about. It is time everyone in packaging takes a stand against the insidious, socialistic creeping to more and more regulation.

Fortunately, some people are raising their voices in protest. One discerning sentinel, John G. Kuniholm, Hercules Powder Company attorney, reminds us to distinguish the *policing* of an industry (or activity) from the *licensing* of it.

"Policing" simply means that you operate your business or activity within the framework of some law or regulation and that if you are doing wrong, the government must prove the illegality of it. But "licensing" means you have to get permission to operate and that when you want to do something, you must prove the legality of it.

The point is this: There is a big difference between the government having to prove you are wrong and your having to satisfy the government that what you want to do is all right. The government bureau in its zeal to be conscientious will make you bend over backward to prove your case.

Regulators will resolve a doubtful case against you because if they decide it in your favor, they might be criticized by senators and congressmen and newspapers. So they tend to play it safe—all of which can cost you plenty. We hear Mr. Kuniholm's firm is spending half a million dollars just to prove the safety of a material that has been used in making paper packaging materials for almost 50 years.

The Food Additives Amendment of 1958, thus, is a licensing law rather than a policing one. Many of you already know the burdens it is creating. And don't think you can shift the load to your suppliers; even if their materials are not safe, it will be your packages, not theirs, the marshals will seize.

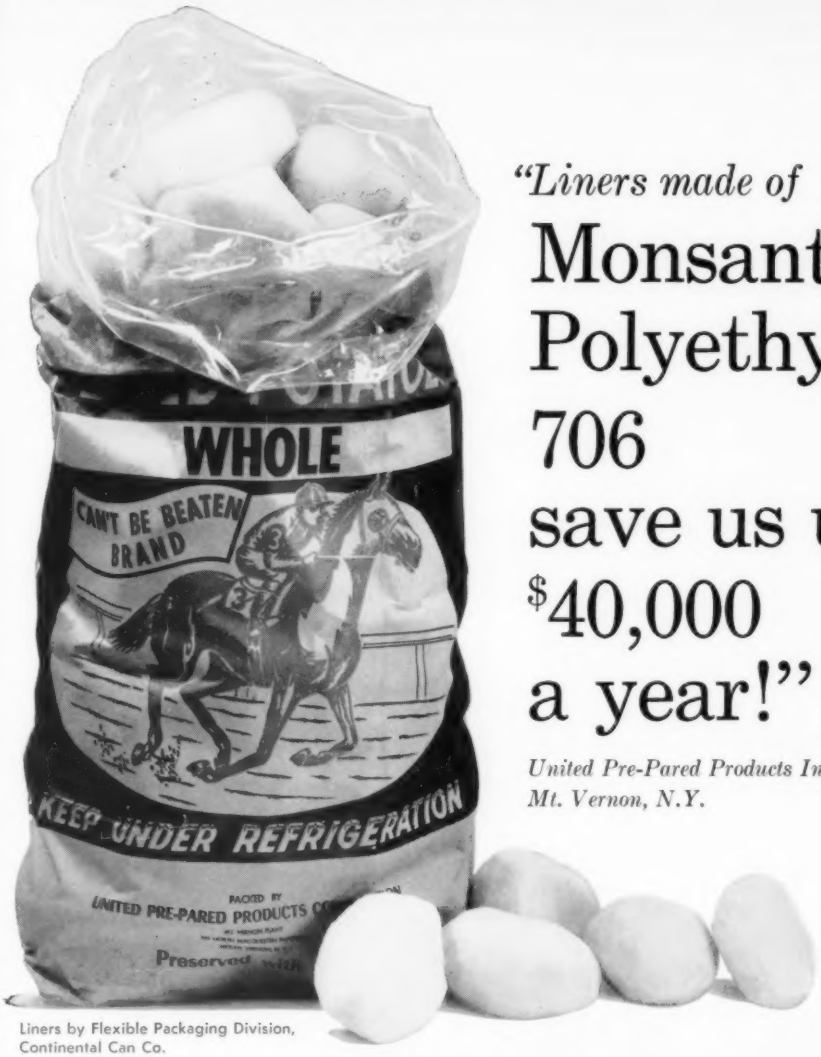
Regulation such as this usually does not hit you in one blow. Rather, it eats away your freedom little by little. And "remember the railroads" if you think your industry cannot be saddled with such regulation. Most businessmen agree the rails are not getting a fair shake, but little is being done about this in Congress. Unless we are alert and vigorous now in warding off unwise regulation, the packaging managers of tomorrow will blame us for their being stuck with, say, "full packaging crew" laws.

"Washington" must serve us, not run us

The concept of a licensing law that makes us go to Washington for permission to do something is contrary to basic principles of American justice. In a criminal trial even a murderer has the right to make the state prove its case beyond a reasonable doubt, and he does not have to testify. He probably does (to show his innocence) but he doesn't have to. In contrast, the government does not have to prove your packaging material is unsafe, but you have to prove it safe. Does this strike you as being the American way?

Bruce Hollingsworth

Editor



Liners by Flexible Packaging Division, Continental Can Co.

"Liners made of

Monsanto Polyethylene 706 save us up to $40,000 a year!"

United Pre-Pared Products Inc.
Mt. Vernon, N.Y.

United Pre-Pared Products ships about a million bags of peeled or french-sliced potatoes to institutions each year. They must reach the customer in perfect condition. No pressure bruises or splits—especially no soiling.

Only polyethylene film with its moisture vapor impermeability and tensile strength can do this over-all job. And United discovered this to their reward and satisfaction.

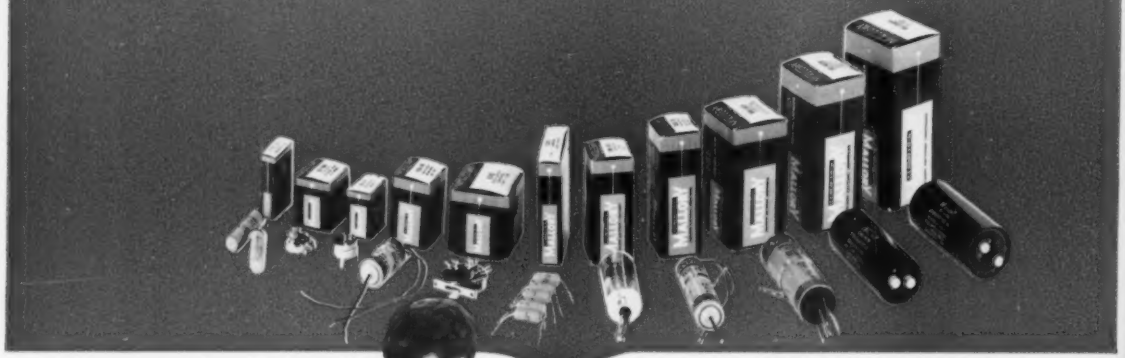
"For years, we used liners made of another material, and we often encountered difficulty in getting positive protective closures. Occasionally these liners, under great stress, would split and were sometimes difficult to separate since the sides stuck together. The result: delays and pile-ups on our production line. After switching to polyethylene liners made of Monsanto Polyethylene 706, these difficulties were eliminated. As a matter of fact, exclusive use of Monsanto polyethylene liners has cut liner costs *in half*, reduced breakage in transit by at least 30%. Liner savings alone amount to as much as $40,000 a year!"

Guarantee dependable packaging service bag after bag, liner after liner. Order polyethylene packaging film based on "Tough 706," the Monsanto resin specifically developed for industrial packaging. For names of converters or suppliers, write to Monsanto Chemical Company, Plastics Division, Room 651, Springfield 2, Mass.

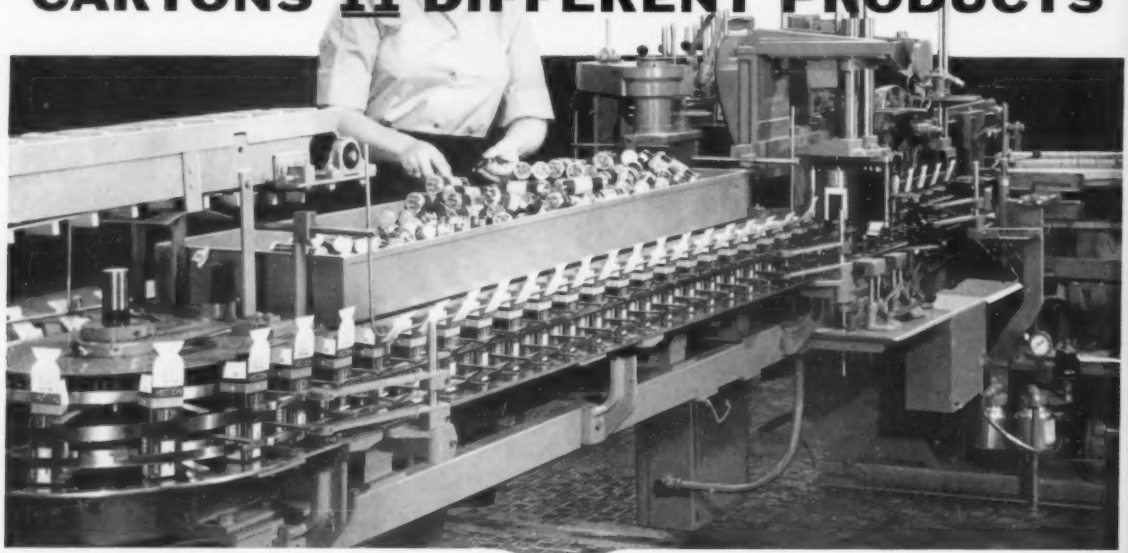
Monsanto

For more information circle No. 255 on Reader Service Card, Page 71

ONE JONES CMV CARTONER



CARTONS 11 DIFFERENT PRODUCTS



AT 40 TO 120 CARTONS PER MINUTE

Eighty percent of the radio, tv and other electronic components handled by the Distributor Division, P. R. Mallory & Co., Indianapolis, are cartoned semi-automatically by a single cartoner. The Jones CMV (constant motion vertical) at Mallory cartons 11 different size products, ranging in size from ¾″ x ¾″ x 3″ to 2¾″ x 2¾″ x 6⅝″.

Change-over from one size carton to another takes only 30 minutes with one mechanic.

A Jones attachment on the CMV for imprinting parts numbers has further increased Mallory's packaging line speeds. It saves the cost of a separate printing machine, with its extra handling, labor and wasted cartons due to overruns.

Over 200 of these flexible, productive machines are in operation daily, speeding up the cartoning of such diverse products as hardware, automotive and electronic parts, drugs and cosmetics, toys and dozens of similar hard-to-carton products. For complete information, write today for your free copy of bulletin CMV.

R. A. JONES & COMPANY, INC.
Cartoning Machines - Case Packers

P. O. Box 485, Cincinnati 1, Ohio

BRANCH OFFICES
New York • Chicago • St. Louis • Los Angeles
San Francisco • Seattle • Mexico D. F.

For more information circle No. 256 on Reader Service Card, Page 71

S

TE

ble,
era-
ing
ard-
nic
and
ton
on,
of

eles
D. F.